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COLORFUL WALL PANELS BRING SCHOOL DESIGN TO LIFE

design can improve or worsen a child's academic performance by as much as 25 percent in the early years. With this in mind, architects are working to design schools that positively impact the learning process.

Many design professionals believe cladding can play an important role in creating a fun and functional learning environment. Cladding is one of the first things students see as they

arrive to school each day and it can help create a sense of excitement for students before they enter the classroom. Incorporating color into cladding is an easy way to create enthusiasm among students and positively impact the overall learning process. Architects are turning toward cladding products that are able to provide color while still remaining durable and cost-effective.

Nichia's custom color Illumination panels are providing architects with the cladding solution they need. Illumination panels deliver bold colors that spark creativity and collaboration among students. Through color match technology, Nichia's Color

Cladding plays an important role in creating fun and functional learning environments

As the drive for innovation in school design increases, so does the need to incorporate eye-catching building materials. Recent research points to school architecture influencing student learning. Students often operate better in a stimulating environment where they can actively participate in learning. In fact, studies show a school's physical



Pacific Trails Middle School

Nichia Vintag



Pope Elementary School used Nichia Illumination panels to create a lively learning space for students while still maintaining all functional aspects. VLK Architects, Inc. infused bright colors into the design using custom color Illumination panels that were installed on both the interior and exterior of the building. The school was recognized by the TASA/TASB Exhibit of School Architecture, receiving 2015 Stars of Distinction in community, design, sustainability value, and school transformation. Nichia provided VLK Architects with a reliable product that allowed them to show innovation and beauty at a cost-effective price.

Xpressions system allows architects to bring virtually any color to life on a durable fiber cement Illumination panel. Illumination provides seemingly endless possibilities as a unique, budget-friendly design option.

Red Hawk Elementary in Erie, Colorado incorporated Illumination panels with a Marigold color finish into its exterior design. According to Ken Field, Principal Architect at RB+B Architects, the design for Red Hawk Elementary stems from the desire to create a vibrant place for kids to learn. Illumination panels were the perfect choice for achieving design intent as they embodied a vibrant color to enhance the overall design. Illumination not only provided a sophisticated look, durable composition and budget-friendly pricing, but students also benefited from the design as the panels created an environment where they can actively participate in the learning process.



Pacific Trails Middle School
EdgeWood | San Diego, CA

Architects are also incorporating different cladding textures into school design that pair nicely with the pops of color. Architects who use Nichiha appreciate the fact that they can buy multiple cladding products from one source. Nichiha has an ever-expanding offering of textures and finishes that allow architects to incorporate the look of stone, wood, brick and much more. In addition to saving money with Illumination, architects can incorporate other Nichiha products into the design, requiring only one installer for all cladding needs. This ensures projects are completed on time and within budget.

Colorful cladding will continue to breathe life into learning environments as architects strive to remain on the cutting-edge of innovation when it comes to school design. It is a design aspect that not only stands out, but also creates a one-of-a-kind learning experience for today's students.



Pope Elementary School
Nichiha Illumination Panels | Cypress, TX



Kids Discovery Museum
Nichiha Illumination Panels | Bainbridge Island, WA

To learn more about how Nichiha is supporting architects in school design [visit nichiha.com/education](http://nichiha.com/education).



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With its innovative conical indentations, the luminous stainless steel and glass curtain wall of **Pei Cobb Freed & Partners' 7 Bryant Park** becomes an extension of the city's green space. From inside, occupants have a bird's-eye view of surrounding park, while outside, passersby appreciate its reflections. Terminating in a floating canopy sheltering a new plaza—the curved motif successfully underscores this private building's public gesture to the neighborhood around it.

Read more about it in **Metals in Construction** online.

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Architect: Pei Cobb Freed & Partners

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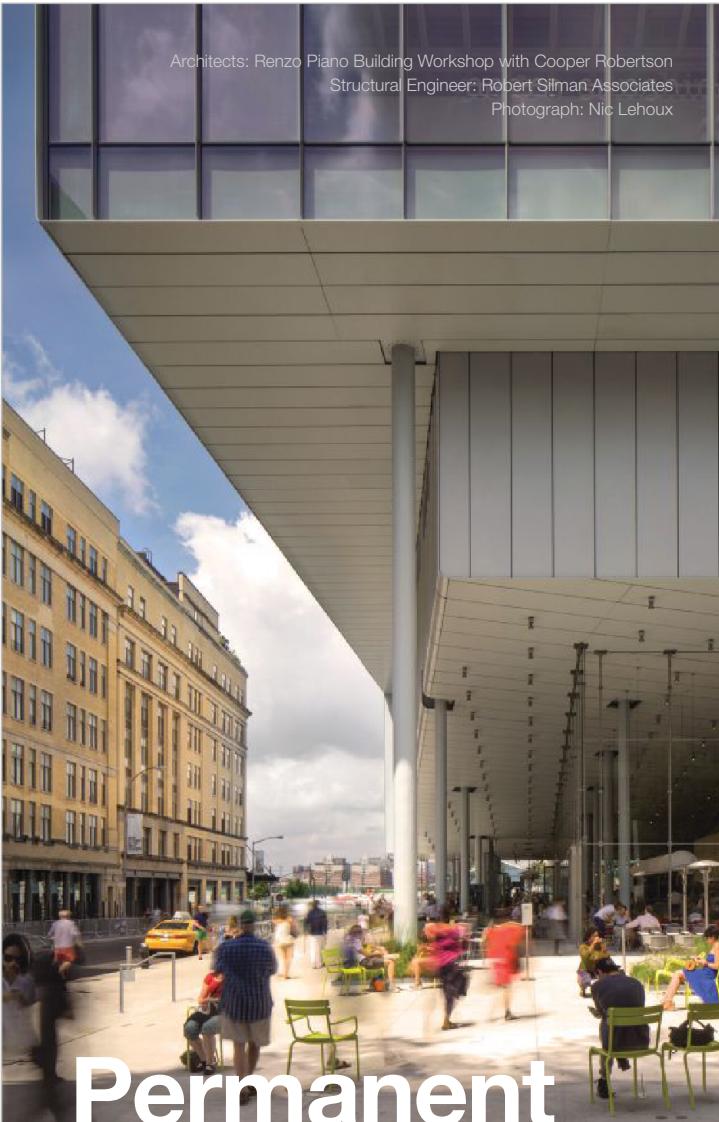
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Permanent Connection

Elevated above Gansevoort Street in Manhattan's Meatpacking District, the **Whitney Museum of American Art**'s new home by **Renzo Piano Building Workshop** and **Cooper Robertson** creates a lasting connection with the city around it. Its steel structure taps into the High Line's energy on one side, while column-free galleries frame Hudson River views on another—ensuring that, whichever way they look, visitors get the big picture. Read more about it in **Metals in Construction** online.

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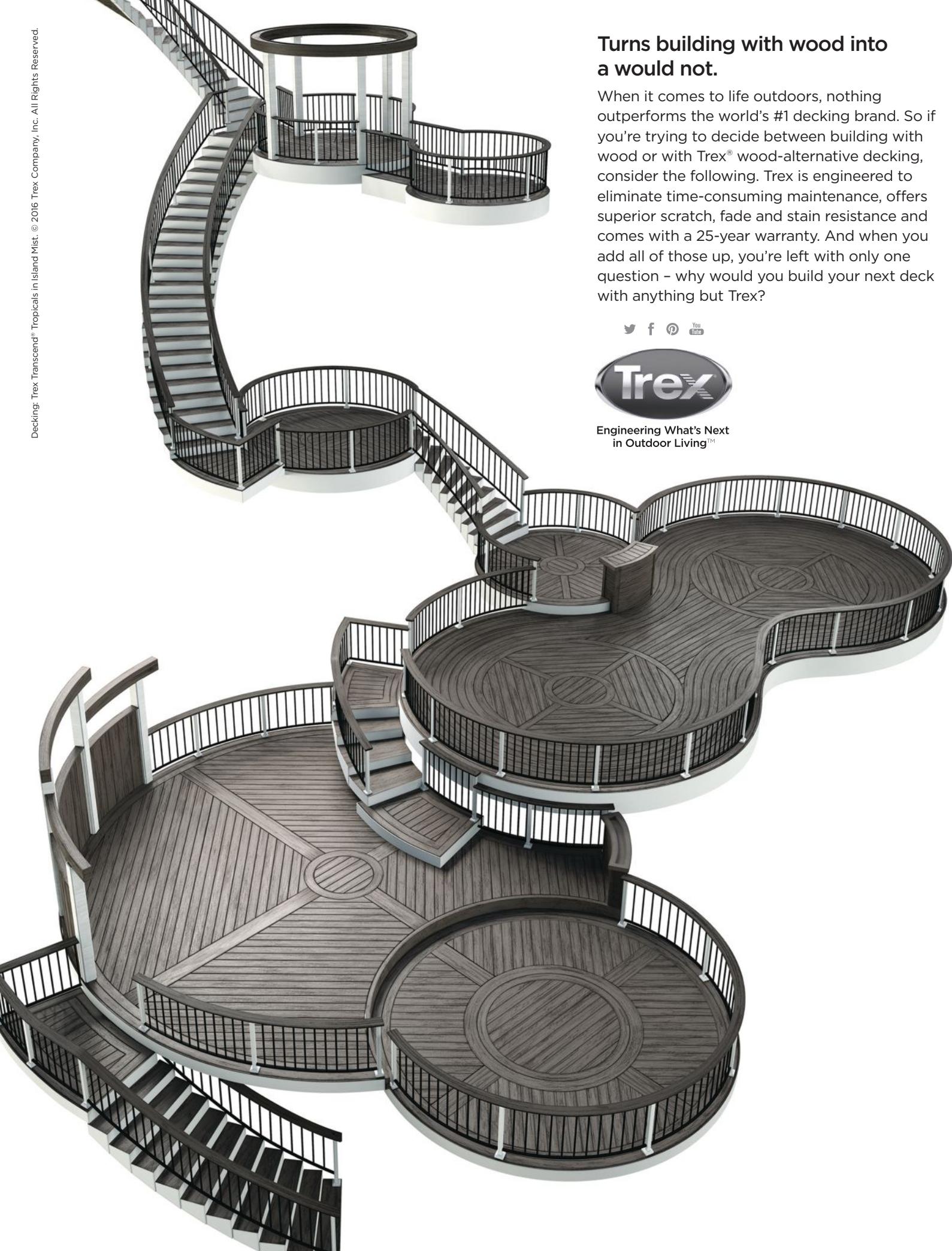
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Art Meets Adrenaline

Belgian artist Carsten Höller's 584-foot tunnel slide in London's Queen Elizabeth Olympic Park is wrapped tightly around "ArcelorMittal Orbit," British-Indian artist Anish Kapoor's sculpture for the 2012 Summer Olympic Games. A 40-second descent at speeds of up to 15 miles an hour leads visitors through 30 tubular sections, each varying in length from about 16 to 30 feet. As it is attached to the Orbit—currently the tallest public artwork in the United Kingdom—the slide is also both the world's longest and tallest. —AUGUST KING

> To read more about Höller's tunnel slide, visit bit.ly/HollerTunnelSlide.



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Mod in the USA

Highlighting the importance of midcentury and modern architecture, the U.S. branch of international nonprofit organization Docomomo announced the 10 winners of its annual Modernism in America Awards. This program not only recognizes the creators of these modernist gems, but also those who work to preserve them. Honorees included the Frederick and Harriet Rauh Residence, in Cincinnati—a restoration headed by Pulitzer Arts Foundation chair Emily Pulitzer, who grew up in the home; the Cincinnati Preservation Association; Architects Plus; and Meisner and Associates (shown). —CHELSEA BLAHUT

> Learn more about this year's Docomomo Modernism in America Awards at bit.ly/DocomomoModAwards.

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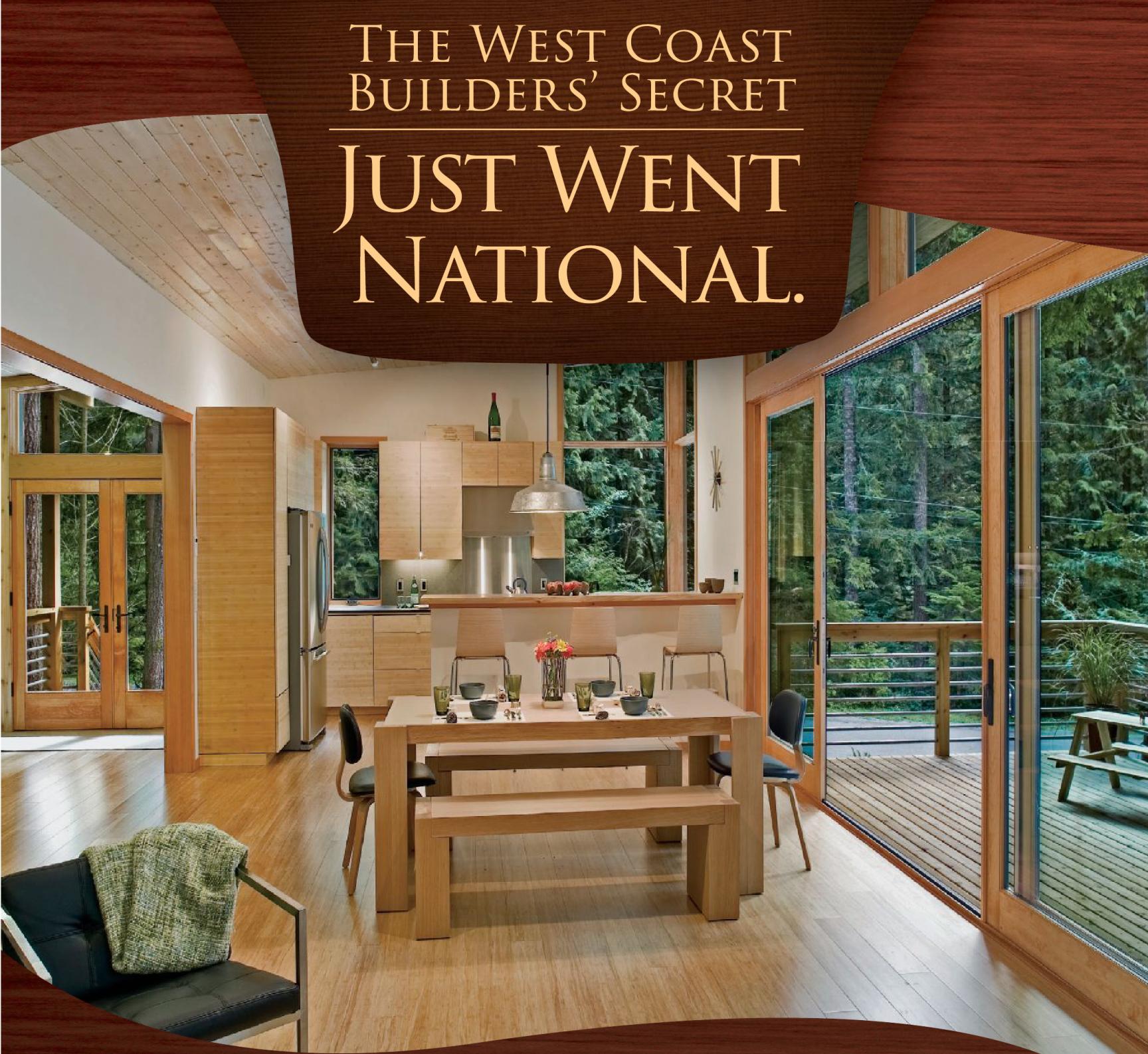
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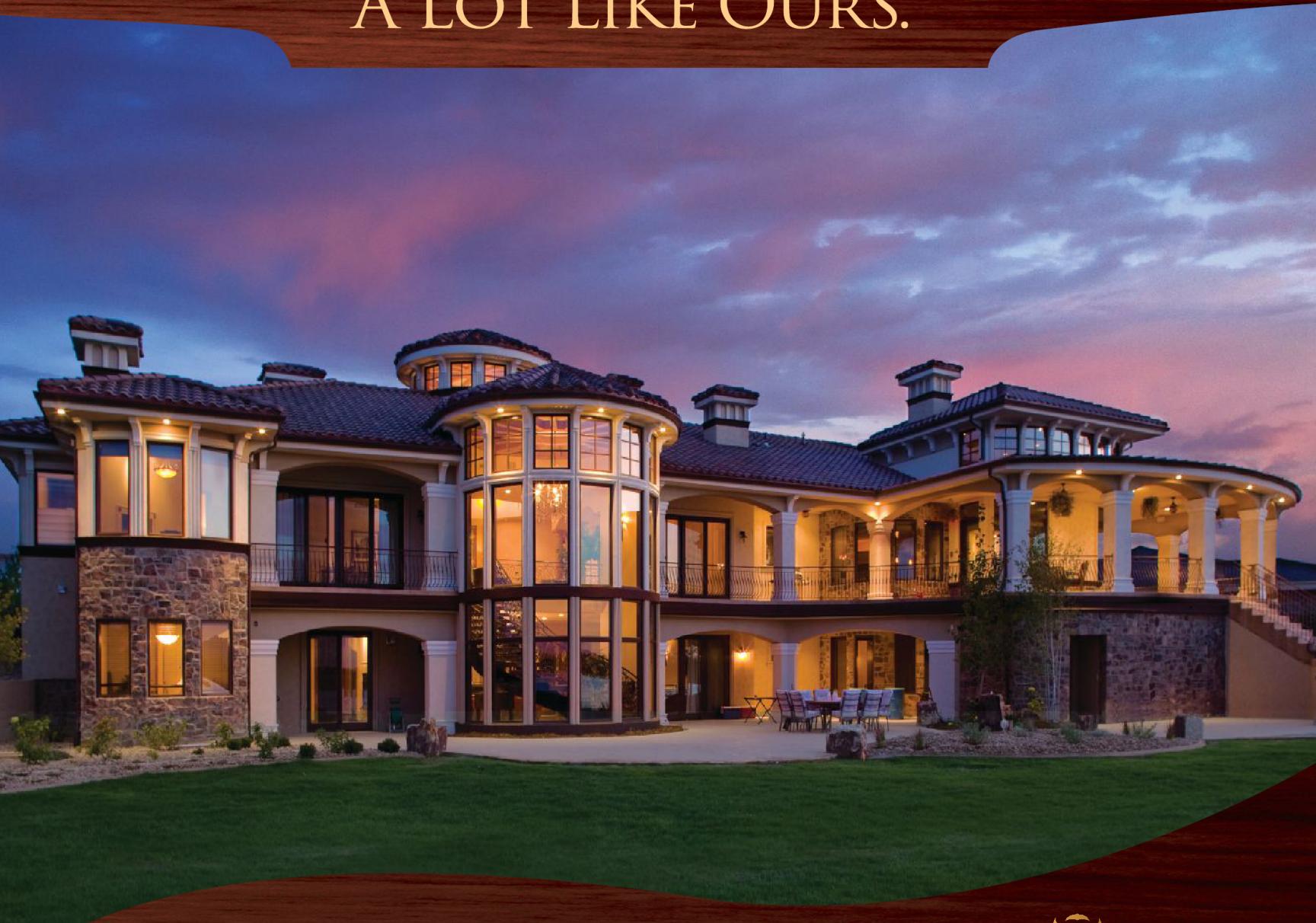
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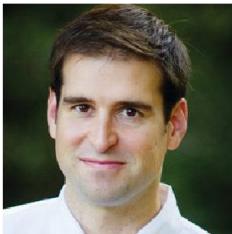
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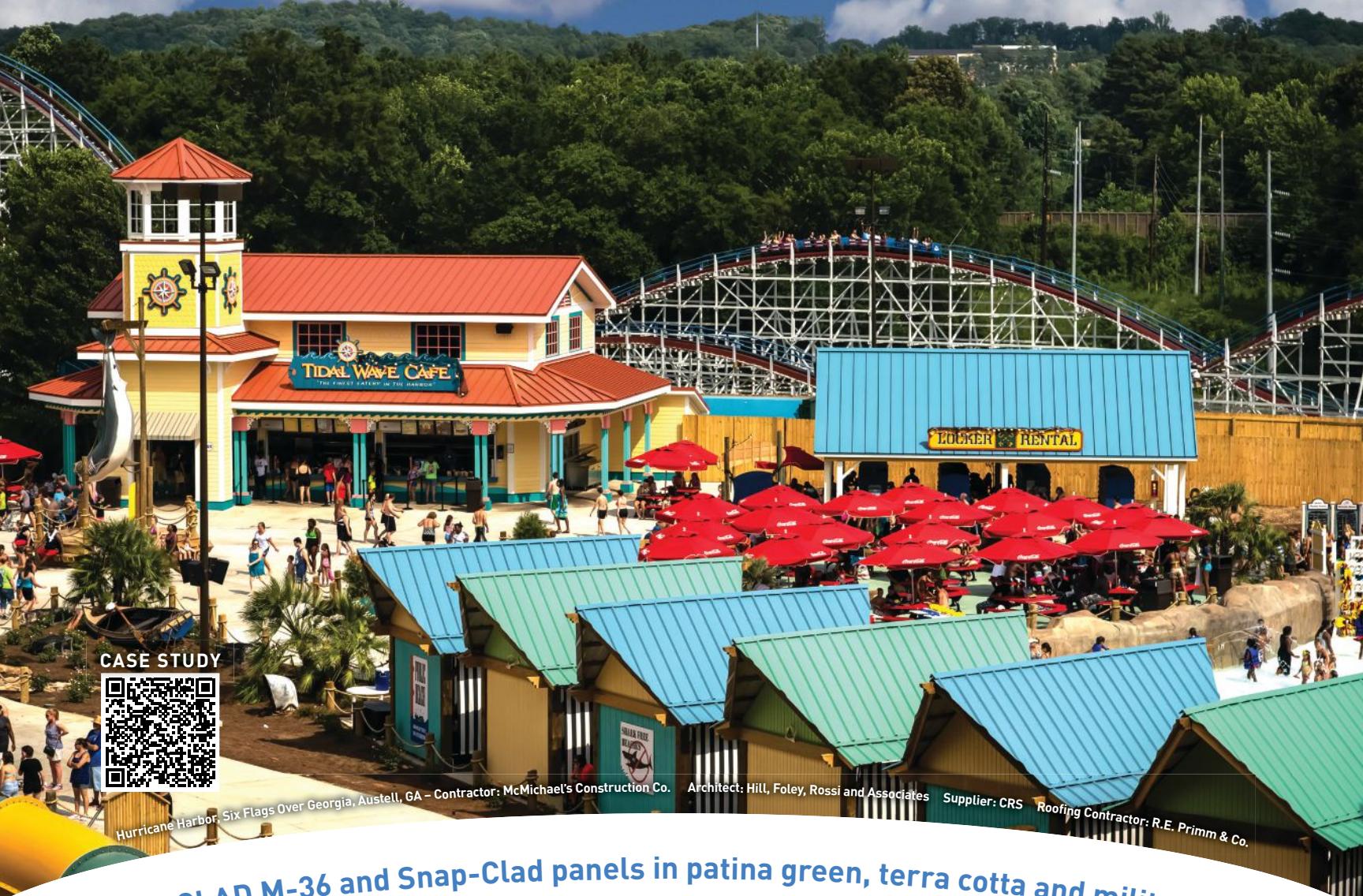
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In Bjarke Ingel Group's maze in 2014 and Snarkitecture's ball pit in 2015, the designers elegantly interpreted recognizable games for the National Building Museum's summer installation. The latest commission, designed by New York firm James Corner Field Operations, tasks the imagination. "Icebergs," which opened in July and runs through Sept. 5, consists of a blue mesh "sea" and polycarbonate "icebergs" on two planes. "It's multidimensional," says founder James Corner. "There's no one view; there's no one object. It's a textural field of these big objects that you walk around and you walk through, and you experience at different levels." —SARA JOHNSON

> Read more about "Icebergs" at bit.ly/NBMIcebergs.



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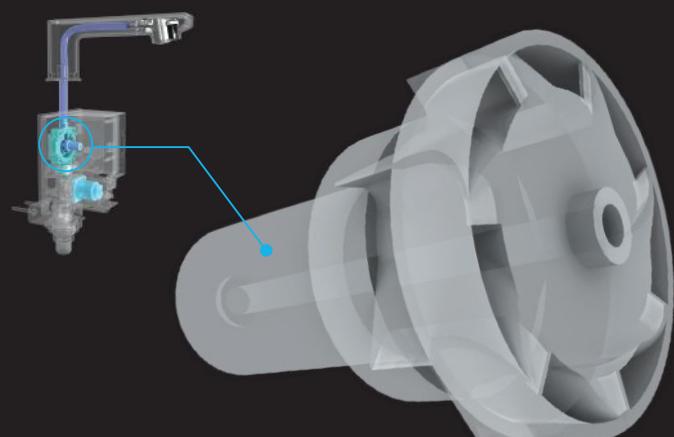
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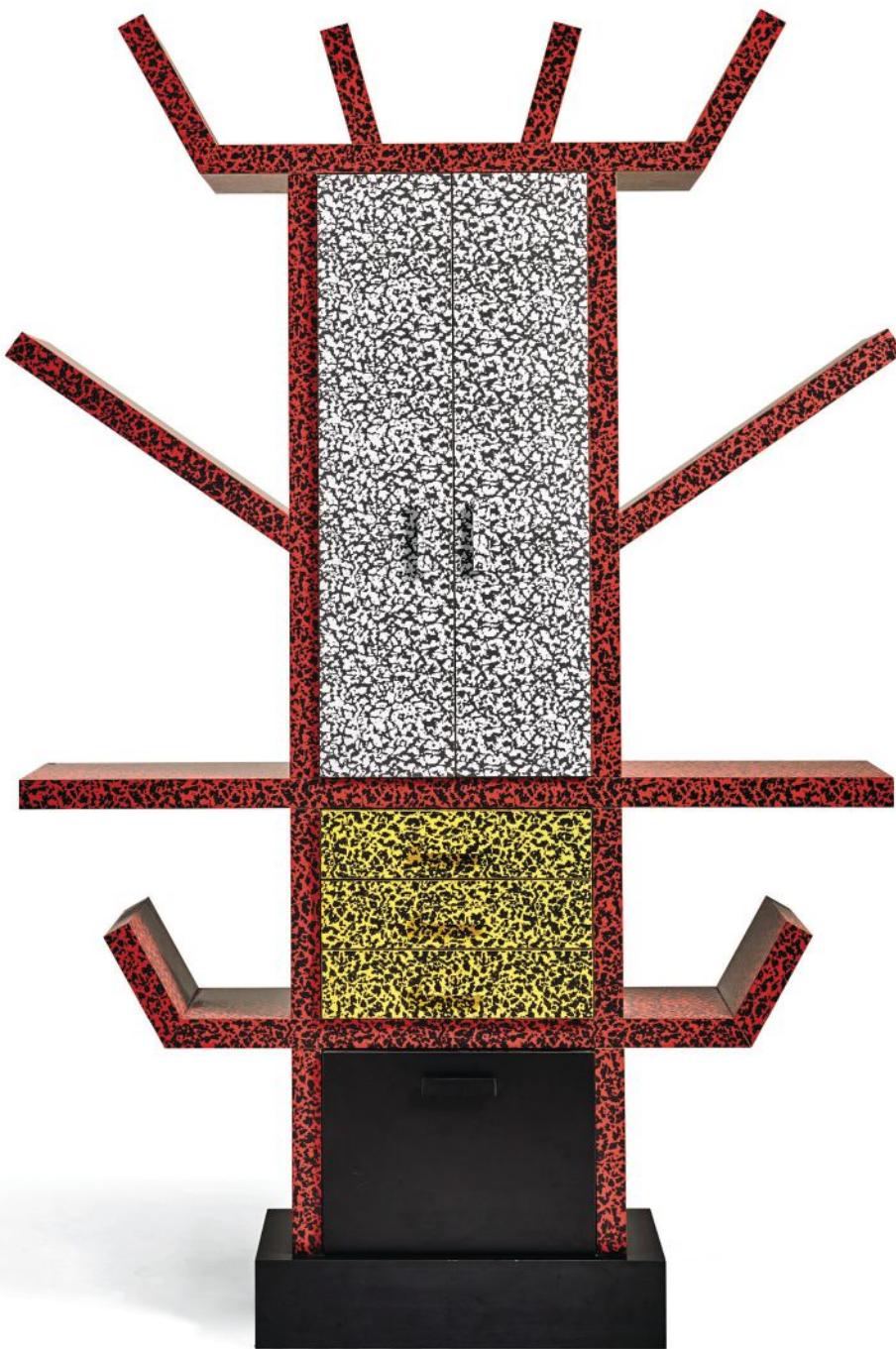
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Ziggy Stardust and the Artwork from Earth

This carefully curated private collection by the late musician, actor, and icon David Bowie is a stunning decades-long culmination of his eclectic taste. Set to be revealed for the first time at an exhibition and auction at Sotheby's in London, Nov. 1 to 10, "Bowie/Collector" includes a range of works from American artist Jean-Michel Basquiat's neo-expressionist painting *Air Power* to Italian architect and designer Ettore Sottsass' satisfyingly symmetrical postmodern furniture piece *Casablanca Sideboard* (shown). The show will help to provide more insight into mind of one of the more innovative individuals of the 20th century. —SELIN ASHABOGLU

> To read more on Sotheby's "Bowie/Collector" exhibition and auction in London, visit bit.ly/BowieCollectorAuction.



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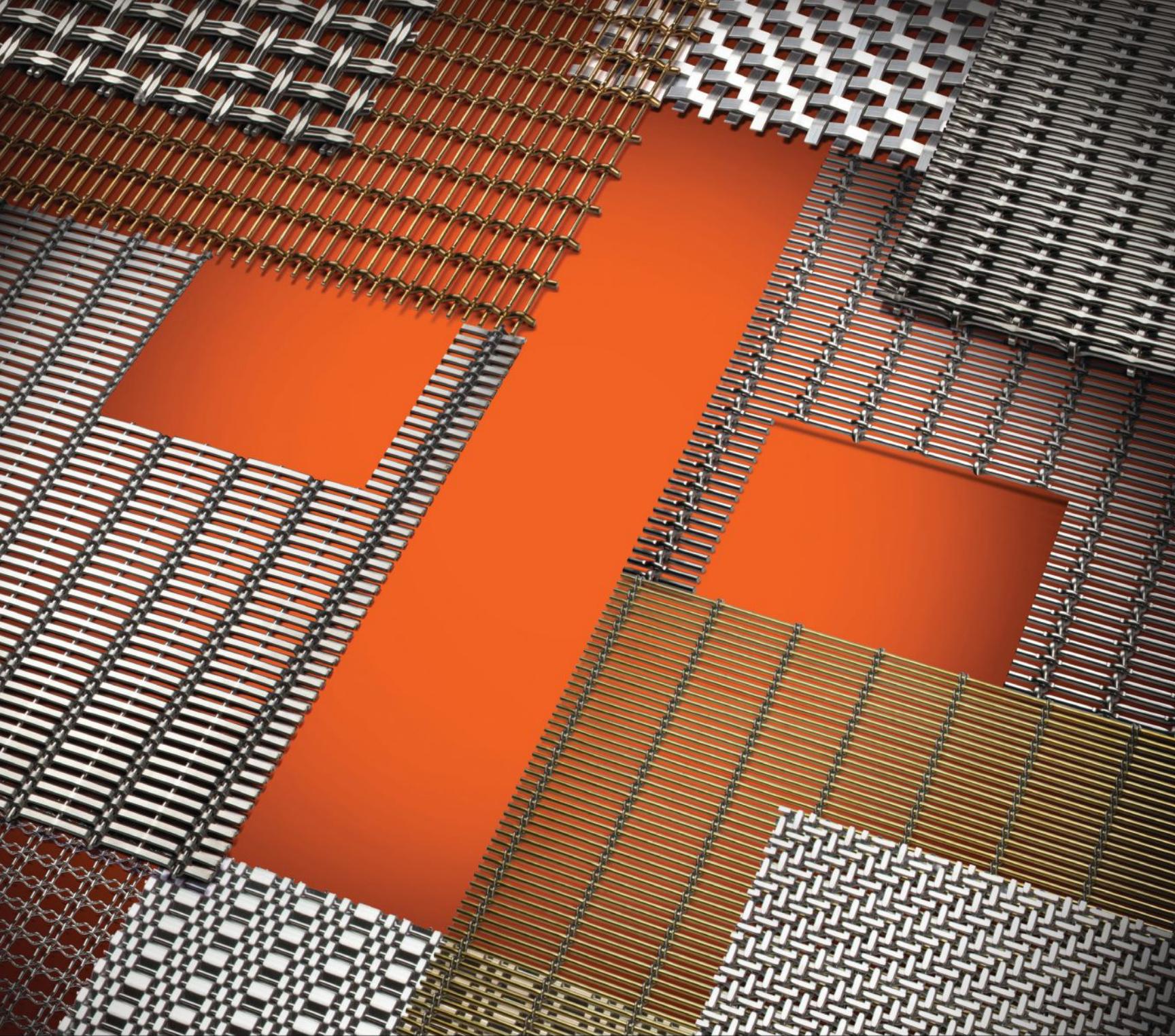
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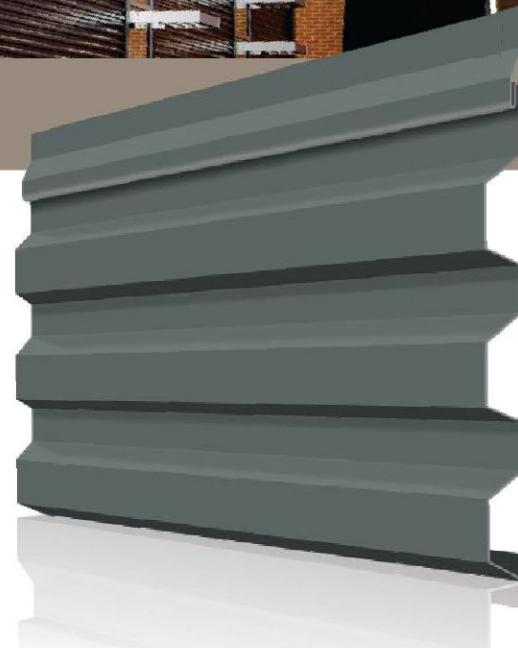
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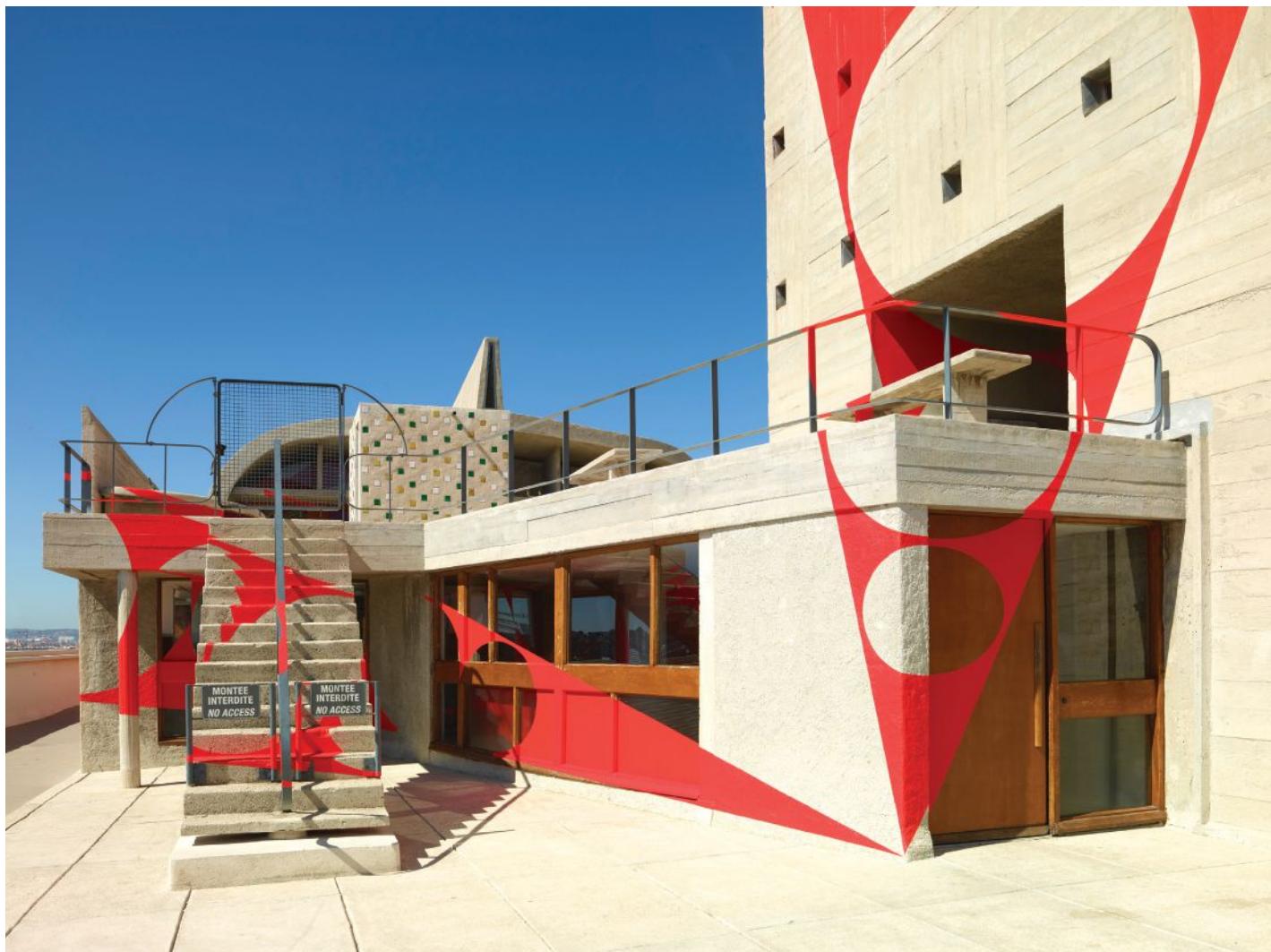
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Party on the Roof

Swiss artist Felice Varini used his signature "perspective-localized" approach—which unites fragmented, geometric shapes painted onto a built space when viewed from a specific point—to adorn the contemporary art space created by French designer Ora ïto atop Le Corbusier's Radiant City in Marseille, France. Varini's installation, "Open Air," includes three pieces: one interior and two exterior, and the installation is part of a program to revive Le Corbusier's intention that the rooftop space, now called Marseille Modulor, host avant-garde performances and art shows. —C.B.

> Learn more about Felice Varini's "Open Air" at visit bit.ly/MaMoOpenAir.

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Best Practices: Making Product Design a Business

TEXT BY LINDSEY KRATOCHWILL

Product design at architecture firms is typically job-specific, with pieces like hardware, millwork, and furniture made to complement a particular project. Some firms market those pieces as stand-alone wares, turning product design into its own revenue stream, which requires careful analysis of demand, production, and distribution.

Establishing Demand

HOK Product Design, one well-known example of such a spin-off, launched in 2009 and operates independent of the architecture firm. "We were given some beta money to prove that we could be successful, we got a couple of contracts, and, voila, [the firm] said, 'OK,'" says director Susan Grossinger.

For Seattle firm Olson Kundig Architects, the idea for a product line—designed by and named for its principal and owner Tom Kundig, FAIA—came from local fabrication partner 12th Avenue Iron. The resulting collection of industrial-chic hardware, a collaboration between the firms, debuted in 2012 and recently expanded to include lighting. Such work might not be right for every firm, however. "It's not necessarily [worth] doing a hardware line because everybody else is," Kundig says. In other words, don't do it just because you can.

Making Room

Marmol Radziner, in Los Angeles, employs roughly an equal number of architects as carpentry finishers, lathers, painters, and concrete and metal workers

in its shop to accommodate the design and fabrication of its furniture and jewelry collections. But the workflow initially took some getting used to. "With building out cabinetry for a home, we know probably eight months in advance when we're going to need to be producing those cabinets," says principal Ron Radziner, FAIA. "With furniture, the order just comes in and we've [maybe] got eight weeks, so we have to be a little more flexible."

Production doesn't always need to happen in-house. HOK Product Design partners with manufacturers to conceptualize and then produce the product or system. Its most successful piece yet—Gather, a seating system for collaborative work—was realized with furniture maker Allsteel, for example. The manufacturing partners hold inventory, since many of HOK's pieces are sold in the thousands.

Going to Market

Capturing revenue from product design differs from the typical mode of billable hours. For example, when pricing their products, firms should consider the cost of materials and design complexity. When Marmol Radziner adapts a one-off piece for the commercial market, it might remove or reduce detailing, or switch materials to manage cost. "There is a simplification to make sure that we can sell at our wholesale prices to a showroom at a number that they can then add their overhead to," Radziner says.

Competitive pricing is critical for Olson Kundig as well. "We're not

making a tremendous profit," Kundig says. To maximize efficiency, the firm uses its architectural staff for its product-design services. HOK Product Design, meanwhile, takes advantage of its network of designers in fields from

"It's not rocket science for us to imagine how a piece of hardware, an object, or an accessory works and how it's used."

—Tom Kundig, FAIA, principal, Olson Kundig Architects

healthcare to aviation to source ideas and work with industrial designers and creative directors to bring them to life.

Promoting a firm's product-design arm independently of its architectural services is important, too. While Marmol Radziner shares clients between product design and architecture, it also uses social media and online marketing to drive sales. And HOK Product Design relies on its manufacturing partners for production, distribution, and marketing since the networks are already in place.

Olson Kundig shows new products annually at the ICFF trade show in New York, and it also employs email newsletters and social media to market the pieces. "It's not rocket science for us to imagine how a piece of hardware, an object, or an accessory works and how it's used," Kundig says, and then communicate that to the market.



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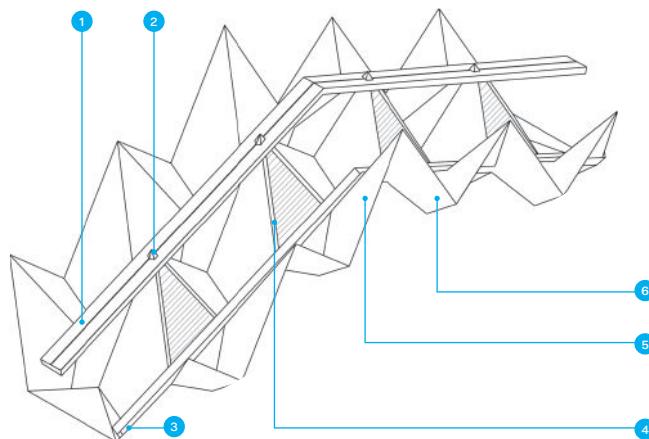
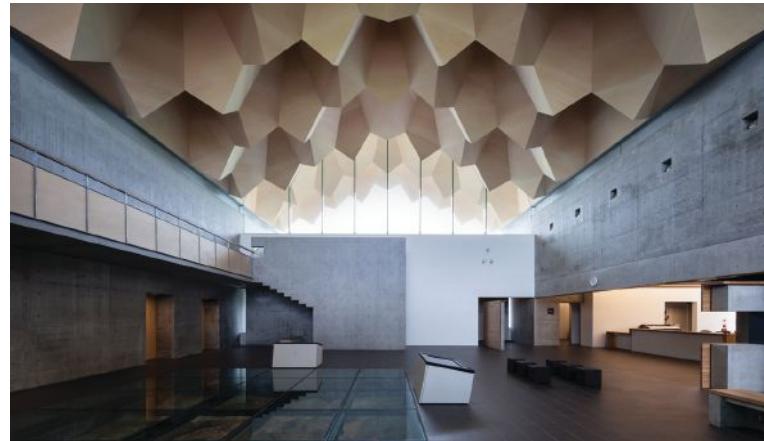
Detail: Miyahata Jōmon Museum Ceiling

TEXT BY TIMOTHY A. SCHULER

In 1998, workers constructing an industrial park on the outskirts of Fukushima, Japan, made one of the largest archaeological discoveries in the country's modern history: the ruins at Miyahata, which date back to Japan's Jōmon period (circa 12,000 B.C. to 300 B.C.). Last year, a two-story, 12,400-square-foot museum dedicated to this period opened. Designed by Tokyo-based Furuichi & Associates with Suzuki Sekkei, the concrete structure sits atop the excavated ruins, which are illuminated and on display courtesy of an expansive glass floor in the main entrance hall.

Mirroring the irregular terrain of the exposed ruins is a dramatic ceiling-scape made of jagged wood panels, which are structural, acting as truss-like members in a complex space frame. "Even architects ... ask me, 'Is it just a ceiling?'" says Tetsuo Furuichi, the firm's founding principal. "I say, 'No, this is structure.'"

The geometry derives from the pottery typical to the Jōmon culture, and its design is as complex as it looks. The architects used Vectorworks to create a structure from three unique types of cones, each of which is made up of six kite-shaped panels, but the digital model was still too abstract. "We couldn't understand the actual space on the computer so we started making a [physical] model," Furuichi says. "We made many models." Once the design was approved, it took three months to build the wood roof structure.



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|--|--|
| <ol style="list-style-type: none"> 1. 12"×6" pine glulam top chord (2) 2. Notch for pyramid apex 3. 14"×4.7" pine glulam bottom chord (2) 4. 2×4 nailer (typ. at panel joints) | <ol style="list-style-type: none"> 5. 1.2" medium-density fiberboard, 6'-12' long by 4'-9" wide 6. 5mm plywood veneer, flame-retardant (finished face) |
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Next Progressives: Thread Collective

EDITED BY DEANE MADSEN
PORTRAIT BY SUE KWON

Location:

Brooklyn, N.Y.

Year founded:

2004

Leadership:

Gita Nandan, Elliott Maltby,
Mark Mancuso (principals)

Education:

Nandan: B.A. art history, University of Michigan; M.Arch., University of California, Berkeley

Maltby: B.A. philosophy, Kenyon College;
M.L.A., UC Berkeley

Mancuso: B.Arch., University of Michigan; M.Arch., UC Berkeley



Gita Nandan



Elliott Maltby and Mark Mancuso

Total staff:

Six, plus a studio dog, Felix.

Mission:

We're interested in the overlap of outside and inside, the social and the ecological, and the city and the home, and we take a wide-ranging approach to sustainability and resiliency at multiple scales.

First commission:

Printshop, in Brooklyn, N.Y., a conversion of a one-story former print shop into a residence, artist studio, and event space. It's organized around a new, small courtyard, and incorporates multiple sustainable strategies, such as the use of materials with a low environmental impact and a photovoltaic array.

Favorite project:

Our Trout House, a three-unit sustainable townhouse in Brooklyn that also serves as our office and residence. We had the experience of being our own client and developer, and met the challenge of achieving a high degree of sustainability and thoughtful design with a modest budget, working within the very rigid constraints of New York's building code. We also had an opportunity to inhabit a project, to live with it, and to learn from it over time.

Design heroes:

Gita's choice is Eileen Grey, for her avant-garde approach to life and design and her take on Modernism through a wide range of scales, from furniture to

architecture. She also loves her lacquer work. Elliott's hero is Carlo Scarpa, for his development of a personal and idiosyncratic visual language, his use of water as a primary design element, and his integration and use of landscape. All three of us credit Samuel Mockbee for our interest in design/build, thanks to his democratization of design and innovative reuse of materials, centering education around social engagement and building.

Preferred social media platform:

Instagram.

Hobbies:

Gardening, teaching, swimming, cooking, and listening to baseball games in the office. That goes for all of us—although Mark swims less.

Vices:

Elliott and Gita share an addiction to buying plants.

Superstitions:

We wait until we have a signed contract before we create a folder on the server for a new project.

Tactile, Layered, and Resonant

GUESTS TO NEW ORLEANS' ACE HOTEL ARE JAZZED BY SYNCOPATED DOOR STYLE



What do you say about a hotel that initially seduces you with a vibe of multi-cultural noir influences, and then delightfully disarms you with a lovingly hand-decorated armoire in your guest room alongside a collection of vintage vinyl records and the turntable to enjoy them on?

You say, "Welcome to the Ace Hotel, the gracious living room of New Orleans."

The new \$80 million, 234-room Ace Hotel is a deep renovation of a nine-story 1928 art deco masterpiece designed by Louisiana Governor Huey Long's favorite architect firm, the celebrated Weiss, Dreyfous & Seiferth. The hotel opened to wide acclaim last March.

When an architectural icon receives this kind of transformation, little is left to chance. So when the owner's in-house design agency, Portland, Ore.-based Atelier Ace, in close collaboration with New York-based Roman and Williams, set to work, all aspects of the interior aesthetic came under scrutiny, including the doors.

"Doors give the first impression of a space," asserts Kelly Sawdon, partner and chief brand officer of Atelier Ace and Ace Hotel Group. "We carefully select the doors of each space at the hotel.

"The guest room doors, for example, feature a diamond panel shape in a fluted pattern, designed by Roman and Williams. The fluted design was inspired from a vintage cabinet door. We particularly like the motif as an added art deco twist," Sawdon explains.

Today the hotel has quietly taken a place of distinction in a vibrant New Orleans hospitality community. "SUPA Doors [a VT Industries company] supplied all our guest room doors,"

says Sawdon. "We've worked with them on other projects with great results. SUPA Doors came through once again with a cost-effective and high-quality solid-core fire-rated door that matched our aspirations. Guests and staff have noticed and shared many kind, positive comments."

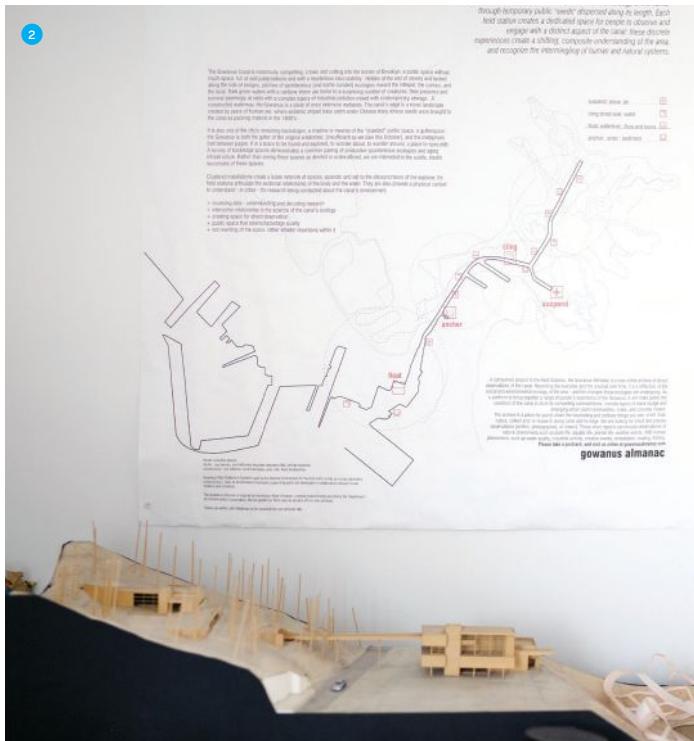
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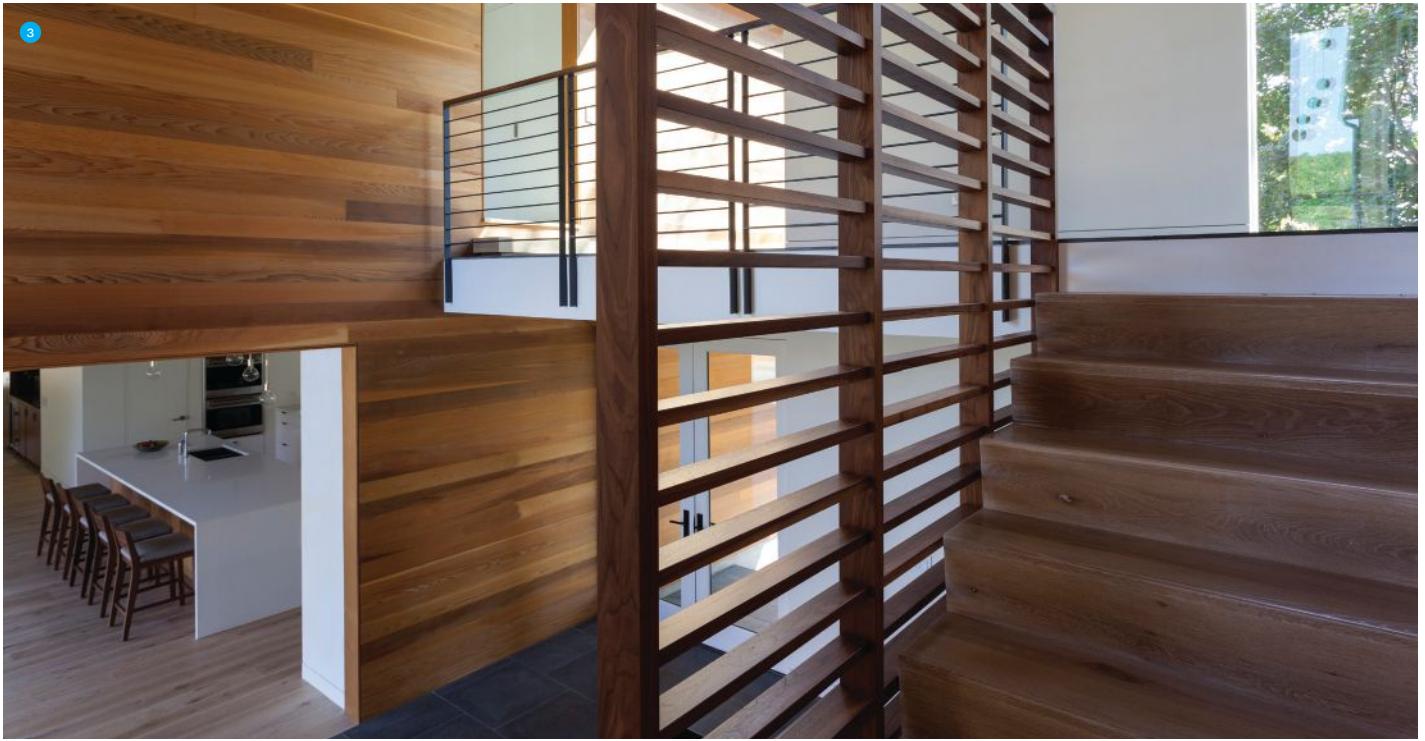
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Next Progressives: Thread Collective





1. Thread Collective transformed a 1-acre plot in Brooklyn's Red Hook neighborhood from derelict land into a productive source of food for New York City Housing Authority Farms, leading to further projects with the authority, including a demonstration kitchen, now on the boards. **2.** The firm's large-scale work includes a proposal for a series of ecological field stations along the length of Brooklyn's Gowanus Canal. **3.** Lake House, sited on 77 acres in Vernon, N.J., reorients structure upon an existing footprint to direct views over a new courtyard to the lake. **4.** A set of cottages for farmhouse resort Basil & Barns will prioritize sustainability on a 100-acre site in upstate New York. **5-6.** Work-life balance takes on new meaning with Trout House, the office and residence that Thread Collective designed for its own use.

Products: Collaboration

TEXT BY SELIN ASHABOGLU



Thesis Flip-Top Table, Teknion

As its name suggests, the high-pressure laminate top of this portable table can be turned up for easy storage or to serve as a whiteboard or magnetic glass surface for presentations. teknon.com



Maker Project Whiteboard, Versteel

A wheeled base suits this 48"-wide-by-72"-tall whiteboard for fixed or impromptu meeting spaces, while a welded and bolted steel-tube frame gives the modern office an industrial edge. versteel.com



Blade, Snowsound

The acoustic panels lining this wall-mounted shelving system have a ribbed surface and offer a noise reduction coefficient rating of 1.0. Bent-metal shelves anchor the unit. snowsoundusa.com



Unscripted Steps, Knoll

Designed in collaboration with David Rockwell, FAIA, these modular blocks can be arranged in myriad combinations to accommodate meetings or solo work. Available in wood or metal. knoll.com



Potrero415, Coalesse

Power supplies and cords integrated in the hollow legs and frame of this conference table reduce clutter and offer users ready access to outlets for charging their devices. coalesce.com



Node, Steelcase

This height-adjustable chair takes the workspace on the go with options such as a five-star base with casters (shown), and an attachable work surface, cup holder, and tablet stand. steelcase.com

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Q+A: WeWork's Miguel McKelvey Talks WeLive

TEXT BY SELIN ASHABOGLU

Launched in 2010, WeWork has become known for offering well-designed, communal office spaces worldwide. The co-founders, chief creative officer Miguel McKelvey and CEO Adam Neumann now want to change how people live in cities with WeLive: furnished, long- or short-term apartments that boast co-living spaces aimed at fostering neighborliness through design. WeLive locations are currently open in New York City and Arlington, Va. ARCHITECT chatted with McKelvey, who studied architecture at the University of Oregon, about his design process and the differences between creating office and living spaces.

How does your background in architecture influence your work?

The most important [thing] I learned in architecture school was that, regardless of the project, [I needed] to keep pushing and keep redrawing. That's a great comparison to a startup: being open to the challenge of taking on anything, any problem that needs to be solved.

How many iterations does a project design go through?

I would love to say not as much as it did in both of these buildings. [The WeLive project in Virginia] is definitely simpler because it's just a rectangle. At 110 Wall St. [in New York], nothing's at a right angle. All of the façade pieces are off-kilter a little bit. So that is an atypical configuration with tons of iterations in the floor plan. You would make one move

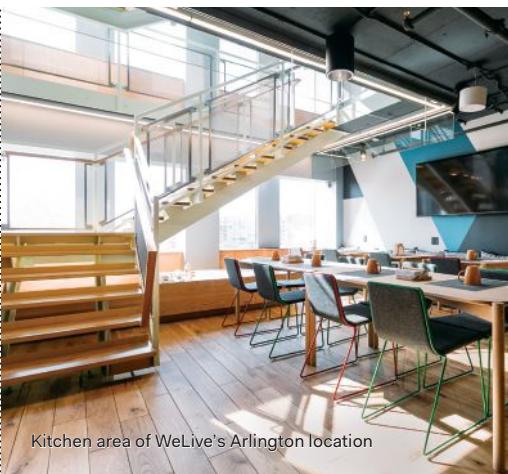
there and gain 2 feet in diameter, then all of a sudden we'd have to make tons of shifts in all of the units to accommodate it. You had this domino effect. There were probably 75 to 100 different floor-plan iterations overall, if not more.

Have you adapted your designs for WeWork for WeLive?

Some things are shared. In WeWork, all of the walls are glass; that's not something we can do in residential buildings. We still wanted to create those interstitial spaces, unlike in a normal apartment building where you would have a hallway and then your unit. We wanted to make an in-between zone where people could exist outside of their apartments. That's also something we do at WeWork: create spaces that are just rolling off of circulation paths. At WeLive, we made connecting stairs between each group of three floors. Hopefully, rather than going on the elevator, you'll take the stairs and build familiarity and then personal connections [with the other residents].

What has been your main challenge with going from designing a work space to designing a living space?

The challenge would be less so in the [physical] design and more in the design of the experience. At WeWork, it's been iterative. We did one building and another, and really learned from each. With WeLive, we had almost two years of planning and then we finally got to release the project to the world. It felt



Kitchen area of WeLive's Arlington location

different both in terms of design but also in the sort of sequencing and the experience we thought people would have. We're still in the design process of the experience. We're responding to the users and making adjustments along the way. We're making programming changes to support their lifestyle.

What other concepts will you explore at the WeLive locations?

How [to] expand this idea of community and connection across more age groups and family configurations. As we grow, that's been something that we feel excited about because we think parents with young children are some of the most connected people. We will figure out how to broaden the community and make it even more valuable to people of all age ranges, experiences, and backgrounds.



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Technology: Neri Oxman's Mask for Björk

TEXT BY WANDA LAU

The first 360-degree, virtual reality livestream on YouTube occurred in June when Icelandic singer and songwriter Björk stepped onto the stage at the Miraikan, Japan's National Museum of Emerging Science and Innovation, and performed "Quicksand" from her album *Vulnicura* (One Little Indian Records, 2015). What was immediately striking beyond the superstar's voice and costume was her mask, one in the Rottlace series of masks designed by the Mediated Matter group at the MIT Media Lab in collaboration with 3D-printer manufacturer Stratasys.



Rottlace is a cognate of the Icelandic word *roðlaus*, or "skinless." When Björk dons the mask, her musculoskeletal system—the muscles, tendons, ligaments, and connective tissues that control and modulate the voice—appears to surface from underneath her skin. The project intends to express "the face without a skin" and create a new identity with origins from the artist's facial structure, according to the Mediated Matter group.

To design the mask, director Neri Oxman and researchers Christoph Bader and Dominik Kolb first 3D scanned Björk's head, generating a point cloud of curvature vectors, and then assigned areas with a high degree of divergence between the primary and secondary curvatures as the mask's rigid, bone-like support structure from which soft collagen fibers emerge, emulating the muscle-to-muscle, muscle-to-bone, and then bone-to-bone connections, with differing degrees of weave density. At least a dozen mask designs were presented to Björk, who selected one for the performance in Japan.

The mask was 3D printed by Stratasys using multimaterial printing, which enables synthetic materials with specific mechanical properties to be distributed in a complex construction in a single-printed object. The three print mediums used in Rottlace vary in rigidity, opacity, and color, whose allocation was determined by geometric, structural, and physiological constraints.

To create the multimaterial print

file, the team had to first parameterize the selected mask design. The team assigned material properties using custom software and heterogeneous-material modeling workflows to ensure a gradual change in flexibility and translucency in the mask. Every fiber was assigned a specific print material—or a precise mix of materials—based on its distance to the rigid support structure, which was also "parameterized based on geodesic distance to source points around the neck area," the team says.

The final outcome looks quite fantastical and, dare I say, comfortable.



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ALECK WILSON.

I'm a third generation San Francisco architect. Like my father and grandfather, I've always enjoyed designing with redwood. It's a durable material that shrinks in a more stable manner, and maintains its architectural integrity. We use it for timbers. We use it for paneling. We use it because of its warmth and depth of color. But for me, it's even more than that. For me, it's a little bit of family history. Get inspired by projects that architects like Aleck Wilson have built with redwood at GetRedwood.com/Aleck.



AIA Architect

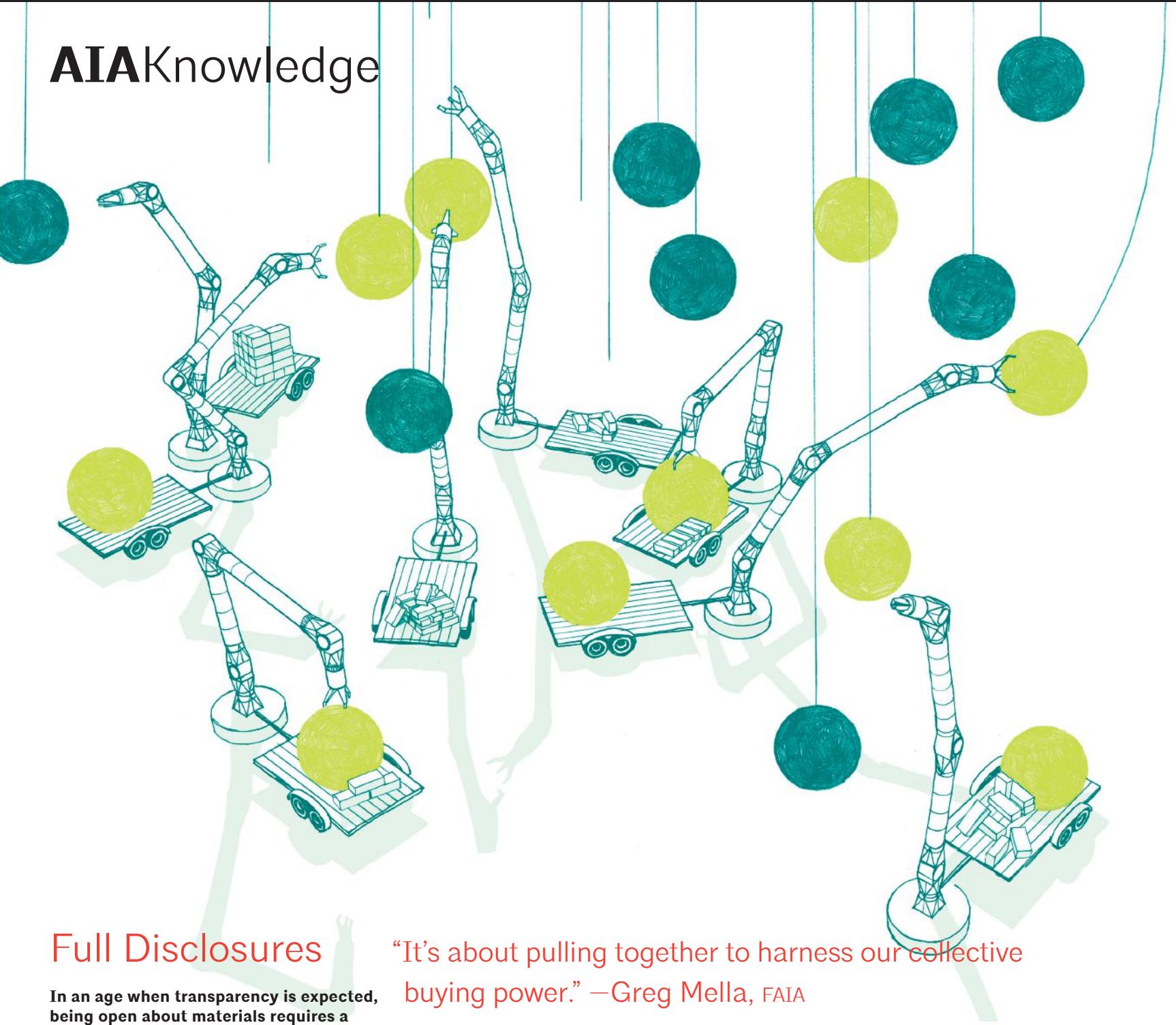
Going to the Source

Ten years ago, if you had been walking down the streets of Brookline, Mass., (or even Boston itself), you might have seen a white van emblazoned with the words “Epistemology Express” in red and blue livery. Think: ersatz ambulance company.

The tagline beneath the lettering was not memorable—something like “knowledge, stat”—but the van itself was unforgettable, as was the incongruity of the entire scene.

We conjure experience, belief, and truth in funny ways sometimes (as evidenced by the van in question). Intuition represents a kind of ineffable “knowing,” for instance, and in creative fields like architecture, intuition counts for a lot in the alchemical design process. Minds that intuit a little differently than the status quo tend to get the lion’s share of attention—especially (but not exclusively) in architecture. Yet those minds also draw from the same pool of influences as everyone else’s—or do they? Asking how architects know what they know is a thorny proposition, so a better way into the topic might be to ask: Where do architects go to find out what they know? In this special issue of *AIA ARCHITECT*, that question tacks three ways: Where do firms find the talent they need to grow today, and where will they find that talent tomorrow? Architectural precedents aside, what are some unexpected places and ideas that inspire architects? And if structures can be seen as nothing more than a set of relationships among materials, then how should architects consider the sources of those materials? Sometimes it takes a 1999 Ford E350 to remind us that we take what we know for granted most of the time. —William Richards

AIAKnowledge



Full Disclosures

In an age when transparency is expected, being open about materials requires a real commitment.

In architecture, the word “transparency” might be used to describe the effect created by a certain type of glazing or the social effect generated by an open floor plan. Today, architects, contractors, environmentalists, and others are broadening the definition of transparency to also apply to building materials—demanding that suppliers reveal the ingredients and processes that contribute to their manufacture and identify problematic substances, such as formaldehyde or plasticizers. For many industry observers,

“It’s about pulling together to harness our collective buying power.” —Greg Mella, FAIA

this movement toward responsible sourcing (and, indeed, greater sustainability) is both a welcome sight and a long time coming—but it also has a long way to go.

When everyone has a powerful search engine in their pocket—and when politicians and celebrities are only a tweet away—we expect greater access to companies and manufacturers as well. It’s an “open source” trend that feeds into the tenets of sustainable design, which has always relied on some level of disclosure. In the earliest days of the LEED system, for example, credits were awarded for products that claimed a certain amount of

recycled content, and it’s now commonplace for architects to specify locally sourced or low-emissions products.

It’s more complicated, however, to determine the chemical composition of a building product, or what level of exposure risk is tolerable for certain users, or how many acres of forestland were destroyed when a product was made. Trickier still are social concerns such as whether unethical labor practices were involved, or whether a particular manufacturing sector has a net positive or negative impact on a local economy. Now that LEED v4 also rewards

transparency and responsible materials sourcing, architects can feel like they also have to be experts in chemistry, ecology, manufacturing, and other disciplines.

Thankfully, architects and sustainability leaders are working to make it easier for the profession to make such sourcing decisions. One longtime leader in this effort is the Cradle to Cradle Certified program founded in 2005 by MBDC (McDonough Braungart Design Chemistry), which certifies products in categories including material health, material reutilization, and renewable energy use. Similarly, the Living Building Challenge calls on designers to use materials that are “non-toxic, ecologically regenerative, transparent, and socially equitable,” prohibiting products that contain certain “Red List” materials such as asbestos, chlorofluorocarbons, mercury, and phthalates, among others.

Encouraging openness in materials—especially as related to healthy design—has been a focus for some time at the AIA. The Institute entered into a partnership with the International Well Building Institute in April and plans to conduct a series of workshops to promote the WELL Building Standard, which sets requirements for occupant health as it relates to air, water, nourishment, comfort, and other considerations. As with LEED, greater understanding of building products will be a necessary element in meeting the WELL standard.

Also in April, the AIA released its first-ever white paper on materials transparency and risk, produced by the organization’s Materials Knowledge Working Group. “Materials transparency & risk for architects: An introduction to advancing professional ethics while managing professional liability risks” focuses on five main points about materials transparency: sharing information is key; transparency presents business opportunities and competitive advantages; these practices do present some risks to firms in terms of legal liability related to product disclosures and other risks; increased transparency can help mitigate those risks; and the AIA has resources to help architects with sourcing and transparency.

Similar efforts are happening elsewhere. BuildingGreen offers a range of product resources for architects, including curated lists of preferred sustainable products. “There is now a societal expectation that information shouldn’t be hidden,” says Nadav Malin, president of BuildingGreen and a frequent contributor to professional development efforts sponsored by the AIA, the U.S. Green

Building Council, and others. “A couple decades ago there wasn’t that expectation. Now product information is becoming easier to find and much more available, so the conversation can move from how to get the information to how to understand and interpret it.”

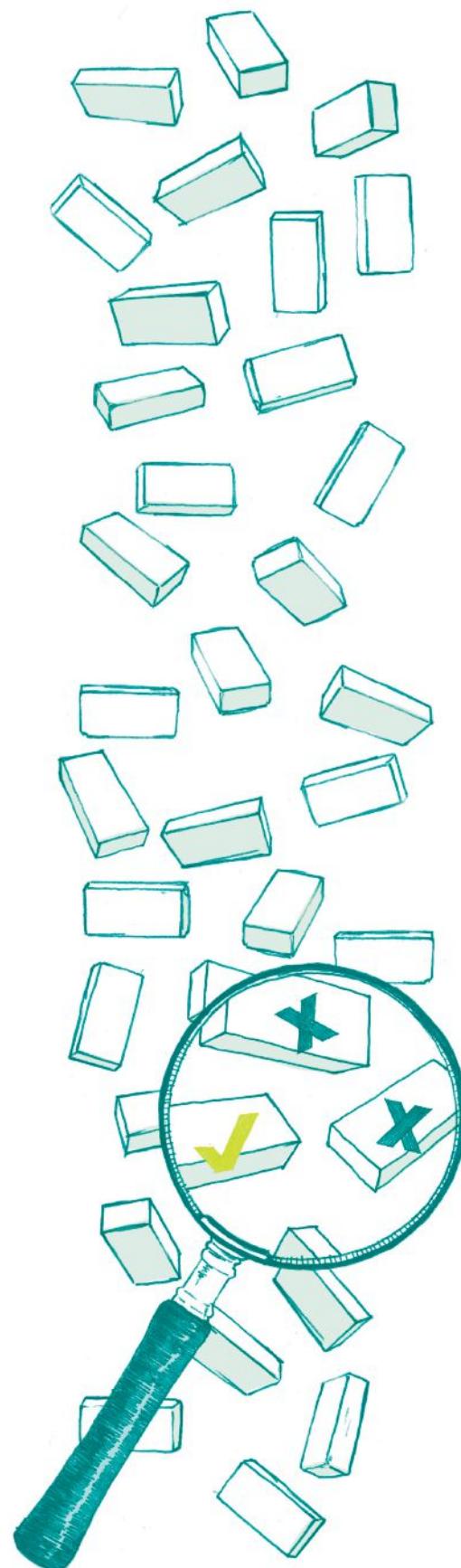
Malin outlines four areas of consideration for determining whether a product is environmentally preferable: upstream environmental impacts; health-related impacts; societal impacts; and habitat and biodiversity impacts. “We understand the typical designer is not an expert in these things,” he says. “There are so many transparency formats, and they tend to be pretty segmented. ... What we’re hoping to see, and hoping to bring about, is more reintegration of all of those things, so it’s not just a trade-off.”

It is helpful at this stage, Malin adds, that LEED has recognized transparency is a goal in its own right, separate from how sustainable or preferable a product might be. “Regardless of how good or bad the product is, you get the credit for transparency,” he says.

This work has been aided by the launch of SmithGroupJJR’s Health Product Declaration (HPD) Library (hpd.smithgroupjjr.org) in October 2015, a searchable database of detailed product information. (HPDs are standardized documents that manufacturers use to disclose building product content.) Completely free and available to the public—including competitors—the library contains 1,100 HPDs so far. Clearly, transparency is catching on. Greg Mella, FAIA, a vice president at SmithGroupJJR, who was recently named a 2016 Living Building Challenge Hero, estimates that 80 percent of the HPDs in the library have been released in the past 18 months, with more coming online every day.

SmithGroupJJR is now working on the massive MGM National Harbor resort and casino project just outside Washington, D.C., and has used that position to ask for more HPDs. “We’ve always taken the attitude that we’re all in this together,” says Mella. “Materials transparency is not about competition. It’s about pulling together to harness our collective buying power.” **AIA**

Kim O’Connell



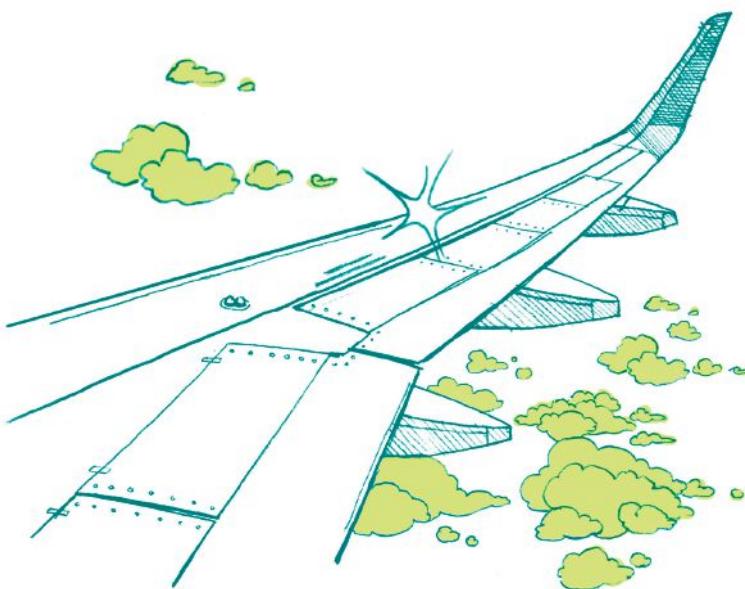
AIA Design

Sourcing Inspiration

Sometimes the best ideas come from unlikely places.

By Caitlin Reagan

Fred Astaire and Ginger Rogers inspired Frank Gehry, FAIA, to design the so-called “Dancing House” in Prague in 1996. The novel *Moby Dick* stirred Steven Holl, FAIA, to design a 1988 vacation home on Martha’s Vineyard. Last summer the Internet exploded with images of Australian-based firm Elenberg Fraser’s Premier Tower in Melbourne, which stemmed from a Beyoncé music video. Motivated by the urban and natural features of Lake Michigan, architect Santiago Calatrava, FAIA, designed the Milwaukee Art Museum’s roof, reminiscent of boats and sails. The impetus to model a design sometimes comes from unlikely sources and, even on deadline, many architects and designers have found that stepping away from their workspace is the best way to spark an idea. On the next couple of pages, seven architects recall the moment when the pieces of their particular design puzzles came together decisively and expressively.

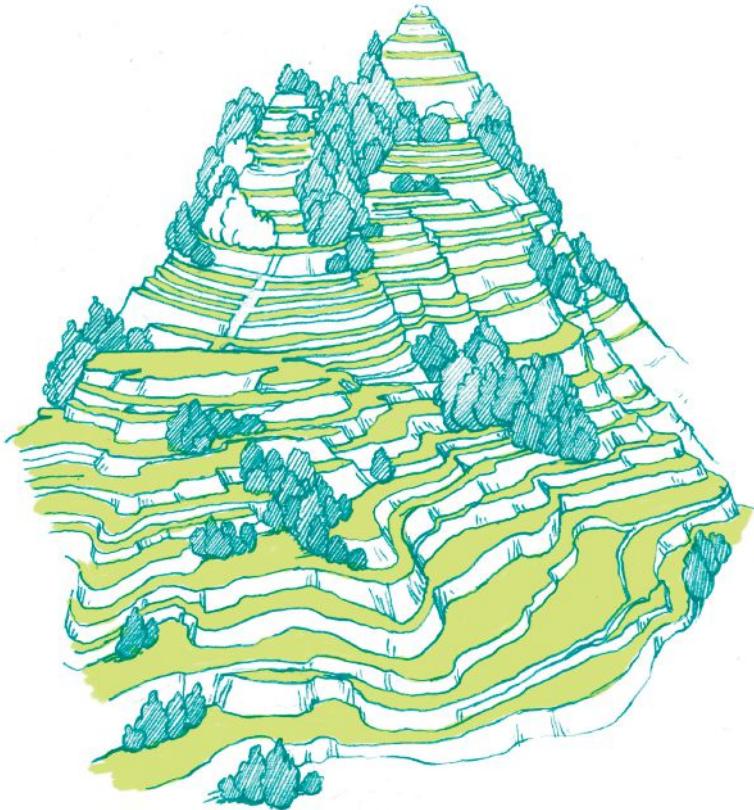


I love to travel, which means flying, and I enjoy looking outside the window and looking over the wing tip. I find the lines, the [sun] rays hitting the metal, the texture of surface, very inspiring. It hasn't yet translated into design on my own work yet. I think it will someday.

—Vaishali Katyarmal, AIA, founding principal, Studio Silver

I'm the lead urban designer and the lead designer for the community center of the McMillan Sand Filtration Site redevelopment. This project is at an old industrial site, a water filtration site in Washington, D.C. There are these large concrete silos that were once used to store sand. That's where they would wash the sand, put it in the storage containers, and put the sand underground. Those sand bins were an incredible source of inspiration for the urban design of that project. Through the process of design, we based everything that we wanted to do on glorifying and objectifying these historical relics that had been sitting on the property rotting since 1984. One of the foundational principles for the McMillan Project was to not preserve these things [like the sand bins] so people can look at them, but to weave these objects into the fabric of urbanism or the neighborhood.

—Christian Calleri, AIA, Perkins Eastman



We were working on a project with our team; it was a unique project that we had been struggling to find a good root idea for, something to help us guide our decisions and to focus our creative process. We started looking at maps and surveys of the Chicago River juxtaposed over the rigid Chicago street grid. The patterns, branches, curves, and offshoots created this incredible design that sparked all of our imaginations. After working with these maps, we created our design guidelines and produced a beautiful design. The end result was the proposal for the Breakwater, the conceptual floating entertainment barge.

—Jean Dufresne, AIA, SPACE Architects + Planners



Food and agriculture are my main sources of fun and inspiration. They are my compasses for deciphering a lifestyle and getting connected to a local culture, may it be where I live or travel. We were designing a green roof of a mixed-use building. It was going to be heavily utilized by the office and hotel as an amenity, and the mall was also going to use it as a retail destination to draw people to the upper levels. Our inspiration was the Banaue Rice Terraces made by the Philippine indigenous tribe Ifugao. The result was a sweeping landscape of terrace steps with some water features and green walls along the sides of the main skylight.

—Bridget Josef, MG2

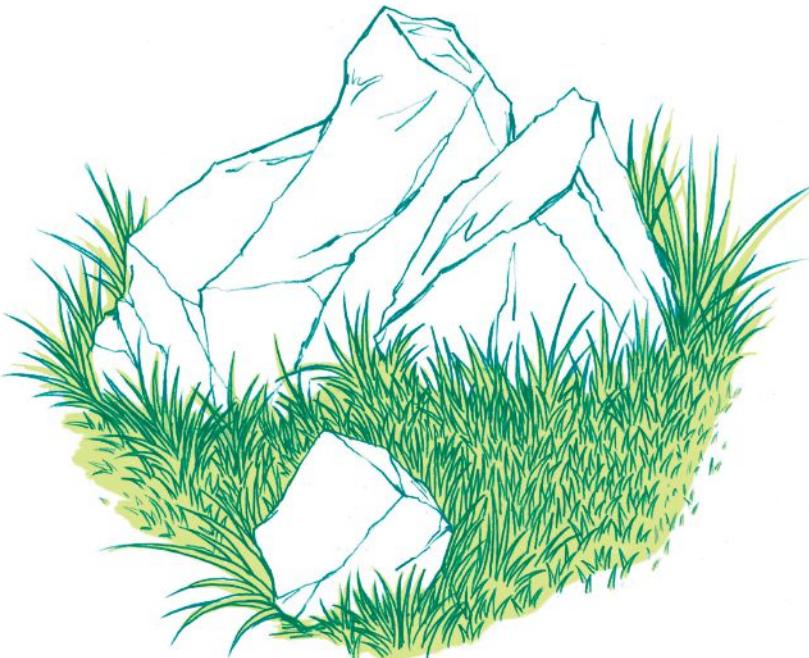
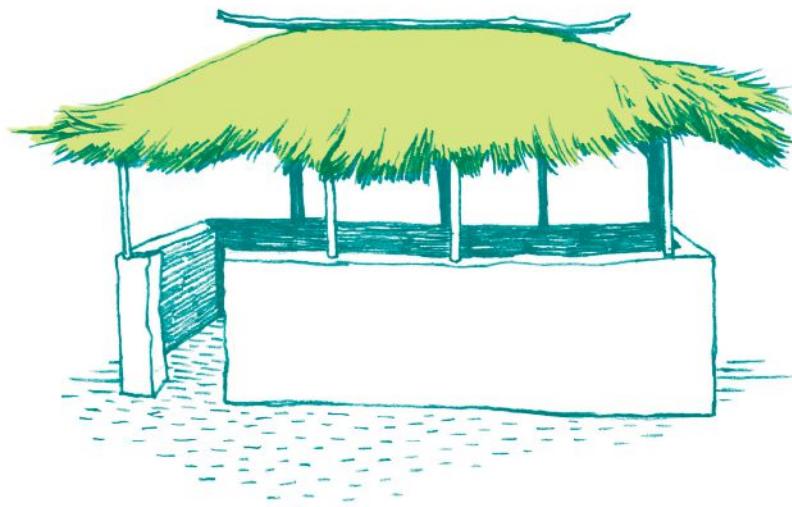


AIA Design

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While we were in Abidjan, Ivory Coast, we discovered that the roofs of buildings are in many ways the most important surfaces—even more so than the walls. We were advocating for making good use of the weather in Abidjan. It does get warm at certain times of the year, but the winds were very predictable so we were advocating for naturally ventilated buildings. We had an observation made to us by a second grader, which was amazing. On campus they have a little building—a straw-made roof, an open structure. Students gathered there to eat their lunch. [The second grader] said she liked that building because even though it was the most rickety-looking structure, it reminded her that she was in Africa. To me that was important because it corroborated the importance of being of the place rather than simply on the place.

—Omar Calderon, AIA, principal, Perkins Eastman

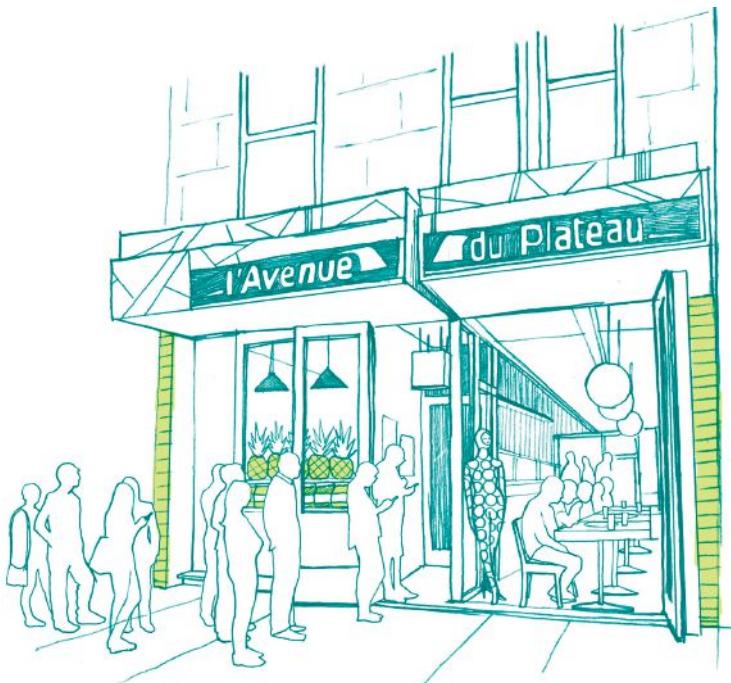


One of my favorite places that I have visited is a small breakfast restaurant in Montreal called Restaurant L'Avenue. I was on vacation when I discovered this very small, vibrant, energy-filled restaurant on the plateau of the city. This quaint spot didn't house more than 50 guests, but all tables were full, with a line of hungry customers extending outside the door. Later, when we met with our client for a new restaurant concept in California, Restaurant L'Avenue is the catalyst that sparked this design; I was inspired by the loud sounds, bold colors, visible food preparation, and simplicity. With these ideas, the PHX Architecture team [Erik Peterson and Maurita Walker] and I designed the new prototype concept for the Saint Marc restaurant in [Huntington Beach] California.

—Davina Griffis, ASSOC. AIA, PHX Architecture

I was visiting a project site that had an existing two-story rectangular building on a rectangular lot. The existing building occupied the front half of the overall length of the lot and faced the street. The empty half was in the back, cut off from the street. The lot was overgrown with weeds and crabgrass and jagged stones covered with grass. Seeing these things triggered the idea of a "Stone in the Garden"—something hard and unadorned emerging from the ground. Our design team created a stand-alone structure with faceted surfaces partially covered with plant life. As the idea developed, those angled forms became the façade and served as a way to draw the pedestrian deeper into the lot and pull the building away from the existing structure in front of it. The end design was a small three-story multifamily building made of cast-in-place concrete, glass, and vertical growing walls connecting to planters on the roof.

—Jason Tapia, AIA, principal, Building Center No. 3



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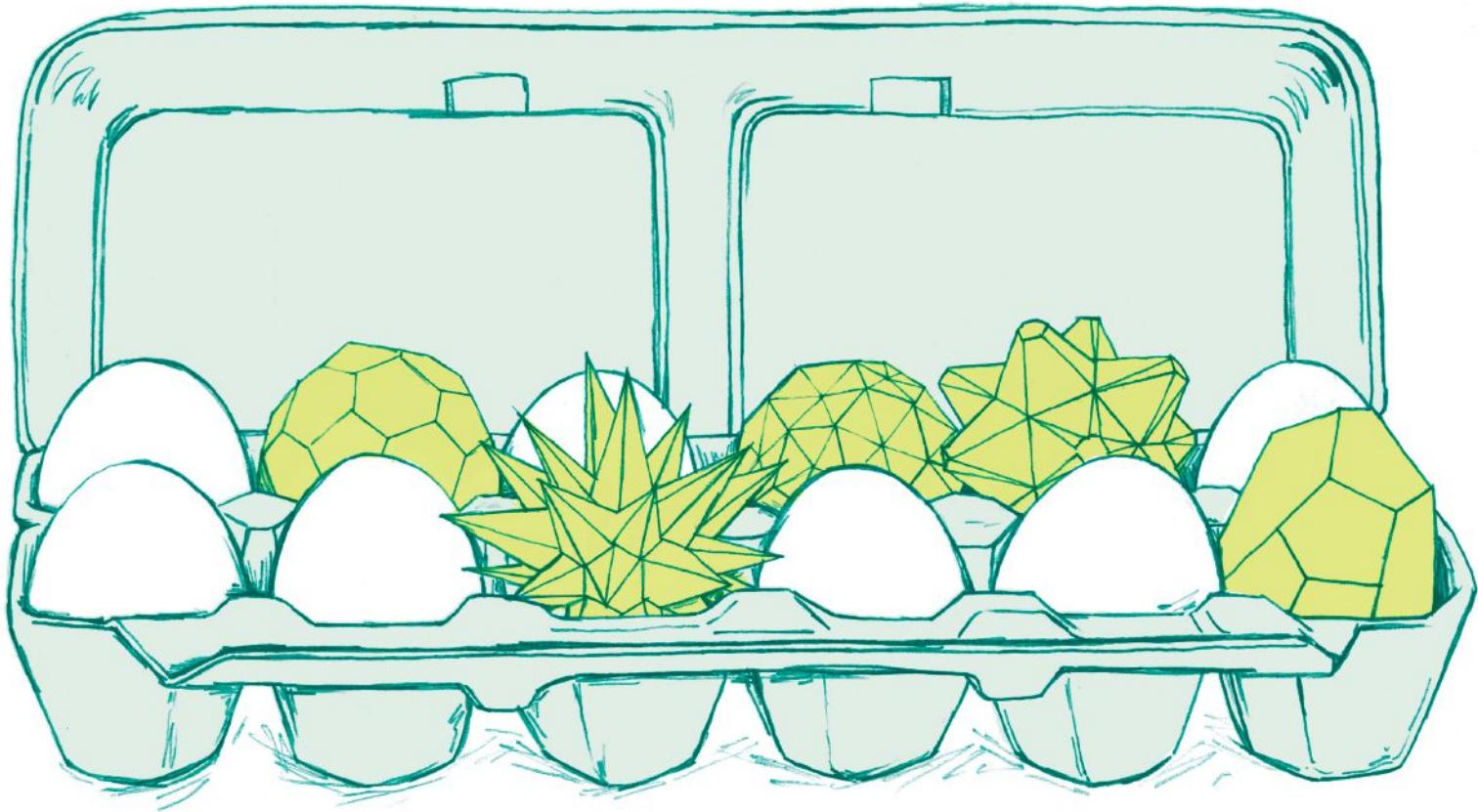
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AIA Future

ILLUSTRATION LAUREN NASSER



New Talent, New Thinking

Architecture firms are looking beyond conventional backgrounds to redefine design.

An environmental psychologist is consulted to explain why the brain responds the way it does to certain settings. A nurse provides early guidance on the design of a new hospital. An anthropologist shares research on how human beings throughout history have thrived in particular environments.

The talent informing architecture is increasingly coming from a breadth of backgrounds, and it's redefining the profession.

"Architecture has always been cross-disciplinary," says Upali Nanda, ASSOC. AIA, director of research at HKS. Nanda came to architecture via the arts and behavioral sciences, and has brought a multidisciplinary mindset to her work. "We are now at the point where we have to transcend those disciplines in an integrated approach that is core to how we work. What's been lacking is synthesizing those

disciplines and bringing them together, so that we do it consistently and make it a part of every project," she says.

HKS endeavors to do just that. In 2008, the firm launched a nonprofit research arm to push the boundary on design research and evaluation in collaboration with academic and industry partners. It also has internal groups on business consulting, operational planning, computational design and fabrication, and sustainability. "HKS was set up to be a large global firm invested in doing best-in-class work with a nonprofit doing research that extends beyond the scope of a project," Nanda says. "Some research needs to be done just in the name of research; but you want to be able to translate that immediately into practice and have that constant dialogue back and forth. We now have anthropologists, industrial designers, business analysts, clinical nurses, and simulation experts as part of our team. Those professionals are bringing in a different way of thinking."

The increasing complexity of architectural projects, the sophistication of clients, and a desire to make true impact through design are among the many reasons for talent that comes from diverse fields. Sharon Davis earned an

MBA and spent years in the financial services sector before becoming an architect and founding Sharon Davis Design in New York. She's now harnessing her business acumen not just to design and program buildings but to help foster local economies in places like Africa.

For the nonprofit Women's Opportunity Center in Kayonza, Rwanda, completed in 2013, Davis helped create jobs as well as a building. "The training of people became part of the project," Davis says. "We said, 'Let's not bring materials from outside; let's use the earth in front of us and put our money into labor.' We trained local masons to make bricks, and now they're being hired for other projects."

Mark Foster Gage, principal and founder of his eponymous firm in New York, has built his practice with a combination of licensed architects and talent from the tech and product design fields. That tech-meets-architecture capacity is one way for a small firm like his to gain a competitive edge. "Just as a new car company can't compete with General Motors, a smaller firm can't always compete with the big firms," Gage says. "So my office is more like a Tesla in that it's aiming to do competition tangentially by introducing new tech and opening up possibilities for innovation that

AIA Future

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other firms can't offer."

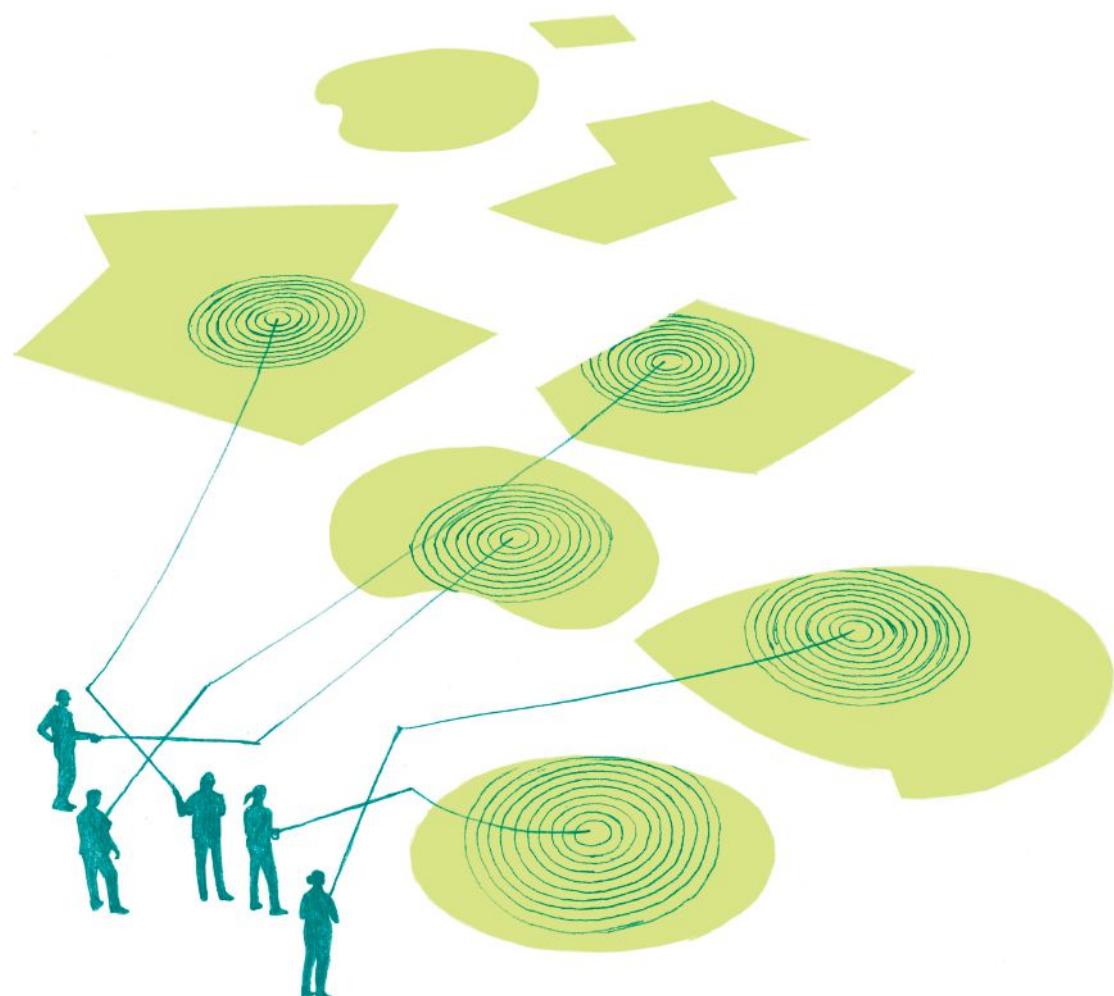
His firm is working on a performance space in Manhattan, for example, that's incorporating highly sophisticated interactive technology on a large scale. "What if we design the building itself as a machine for dealing with interactivity and social media? There's going to be a market for these new types of intelligent buildings."

Gage is also an assistant dean and chair of admissions at the Yale School of Architecture, a school that famously reserves at least 30 percent of admissions for people with little to no architectural background. "We've had an Egyptologist, an ecologist, an optometrist, a circus performer," he says. "We're trying to bring intelligence from all of these other disciplines into architecture school. We want them to converse between disciplines, and that's what's largely going to define architectural practice for my generation—collaboration and interdisciplinarity."

Where firms source their workforce talent is also broadening. The Internet has become a powerful collaborative tool. "I can post that I need a certain specialty, and I can find and see portfolios from anywhere in the world," Gage says. "Major corporations are also going this route, but it's particularly empowering to smaller architecture firms. It's like a video game—you grab the ax when you need the ax and sword when you need the sword."

Gage's secret source for global talent is Craigslist. "I would say that a good percentage of the people we collaborate with come from posting on one of the lowest-tech sites on the Web. I have connected with people from the arts, from the automotive technology industry, a hot-rod manufacturer, metalworkers, a mushroom grower, a metallurgist, renderers ... and, of course, movers."

Architects are also being sought out for compelling collaborations beyond brick-and-mortar design. When brain scientists at the Johns Hopkins University in Baltimore wanted to study the neuroscience of aesthetics and how that impacts the way humans experience the built environment, they called on Tom Kundig, FAIA, of Seattle-based Olson Kundig. "What's helped my career is actually not being solely focused on architecture, but rather being attuned to the world around me," says Kundig, who studied physics before switching to architecture. "Architects should be professional voyeurs. At our firm, we're looking for misfits that are generalists, with the hope that we can assemble this body of people that come at architecture from different angles. It becomes a stew of



"We now have anthropologists, industrial designers ... clinical nurses, and simulation experts as part of our team." —Upali Nanda, ASSOC. AIA

intellectual thinking that's fascinating."

Robert W. Moje, FAIA, a founding principal of VMDO, says his firm often brings in expertise ranging from the brain sciences and graphic design to public health when designing one of their dozens of award-winning K-12 projects. For Discovery Elementary School in Arlington, Va., one of the largest net-zero school buildings in the country, the goal was to foster childhood imagination while tethering it to curricular learning. "We're trying to do that in a sophisticated and educational way that's tied into brain science," Moje says. "I spend a lot of time trying to understand how the brain works and what the implications are for architecture."

Would his firm ever hire a neuroscientist on staff? Maybe, Moje says, but better yet

a neuroscientist-turned-architect. "The profession has potential to help humankind by branching out and binding ourselves with other fields to see how we can make architecture more meaningful to the greater society. Neuroscience is just one example," Moje says.

More than tapping myriad expertise and mining specific skills, the fusion of disciplines into the profession is paramount. "There's a magic in getting more people involved in the creation of architecture," Moje says. "As a profession, we think architecture is ours, and we don't always want input. In reality, we need to start understanding that the more minds you can put on a problem the deeper and richer the potential solutions." **AIA**

Elizabeth Evitts Dickinson



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WOOD AND INDOOR ENVIRONMENT

CREATING BENEFICIAL SPACES FOR LIVING, WORKING, WELL-BEING

Presented by:



Bolton Dining Commons, University of Georgia | Athens, Georgia | Smith Dalia Architects, Bruner/Cott & Associates

In this 50,000-square-foot dining commons, Douglas-fir structural roof decking and truss timbers respond to the client's desire for natural materials that evoke feelings of warmth and comfort, have visually appealing textures and patterns, and resonate with students and staff. Photo by Richard Mandelkorn

The objectives of sustainable design are broader than just environmental effects, having come to embrace issues of human health and performance. As sedentary and service-related work becomes more prevalent in our society, the amount of time people spend inside buildings increases—the average North American spends 90 percent of his or her time indoors, another 5 percent in cars and only 5 percent outside. This not only makes the design of building interiors ever more important, but calls for the buildings themselves to provide a

connection to nature that will only get harder to come by.

Many factors influence whether a building has a positive or negative impact on its occupants. This course highlights remarkable buildings where the use of wood as a structural or finish material has made a unique contribution, with a focus on indoor air quality, acoustics, physical health, and a natural, positive human response to wood that has always been intuitive, but is increasingly being proven by research and experience.

LEARNING OBJECTIVES

Upon completion of this course the student will be able to:

1. Define the relationship between a building's sustainability and the health and performance of the building's occupants.
2. Explore how wood was used to enhance the experience of building occupants in projects from around the country.
3. Recognize how wood used as a structural and finish material contributes to key elements of occupant environment including indoor air quality, acoustic performance, and physical health.
4. Examine evidence confirming the positive human response to wood for its aesthetic qualities and connection to nature.

CONTINUING EDUCATION

AIA CREDIT: 1 HSW/LU

GBCI CREDIT: 1 CE HOUR

AIA COURSE NUMBER: ARAUG2016.2

GBCI COURSE NUMBER: 0920009305



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occupant comfort and performance, resulting in spaces where people feel good and do well over long periods of time.

Architect Reese Rowland, a principal at Polk Stanley Wilcox whose projects include the Hillary Rodham Clinton Children's Library (see sidebar on page 5) agrees. "Our most recognized spaces are those where wood is prominent," he said. "Whether the story calls for a progressive, modern language or something more transitional, the key to the most memorable spaces is warmth and natural light. Wood gives warmth like no other material."

INDOOR AIR QUALITY

Indoor air quality is a basic requirement for humans in any space. Wood itself is considered to be hypoallergenic; its smooth surfaces are easy to clean and prevent the buildup of particles that are common in soft finishes like carpet. Solid wood products, particularly flooring, are often specified in environments where the occupants are known to have allergies to dust or other particulates.

Most wood structural panel and engineered wood products use phenolic resins or diphenylmethane diisocyanate (MDI). Their unique chemistry makes these waterproof adhesives highly durable and stable, resulting in negligible formaldehyde emissions. Large-scale chamber tests have shown that formaldehyde emission levels in wood structural panels are no higher than the levels found naturally in the environment. For this reason, formaldehyde levels associated with phenolic resin-bonded products are exempt from the U.S. Department of Housing and Urban Development (HUD) testing and certification requirements.

The use of wood products can also improve indoor air quality by moderating humidity. Acting like a sponge, the wood absorbs or releases moisture in order to maintain equilibrium with the adjacent air. This has the effect of raising humidity when the air is dry, and lowering it when the air is moist—the humidity equivalent of the thermal flywheel effect.

SOUND OF WOOD

Architect Marcy Wong, whose firm Marcy Wong Donn Logan Architects frequently uses wood for its acoustic properties, articulates the connection between acoustics and sustainability in this way: "In addition to the usual sustainable advantages of wood—renewability, nontoxic,



One of the many innovative uses of wood on the exterior and interior of new student housing at the University of Washington in Seattle. Photo by Benjamin Benschneider, courtesy of Mahlum Architects

carbon storing—there is an additional aspect, that being acoustics. Sustainability is more than being responsible about the impact of a project on the earth's resources and climate, but also on the quality of environment for users."

For centuries, wood has been the material of choice for architects and designers intent on delivering the highest quality acoustic performance. From a violin to a concert hall,

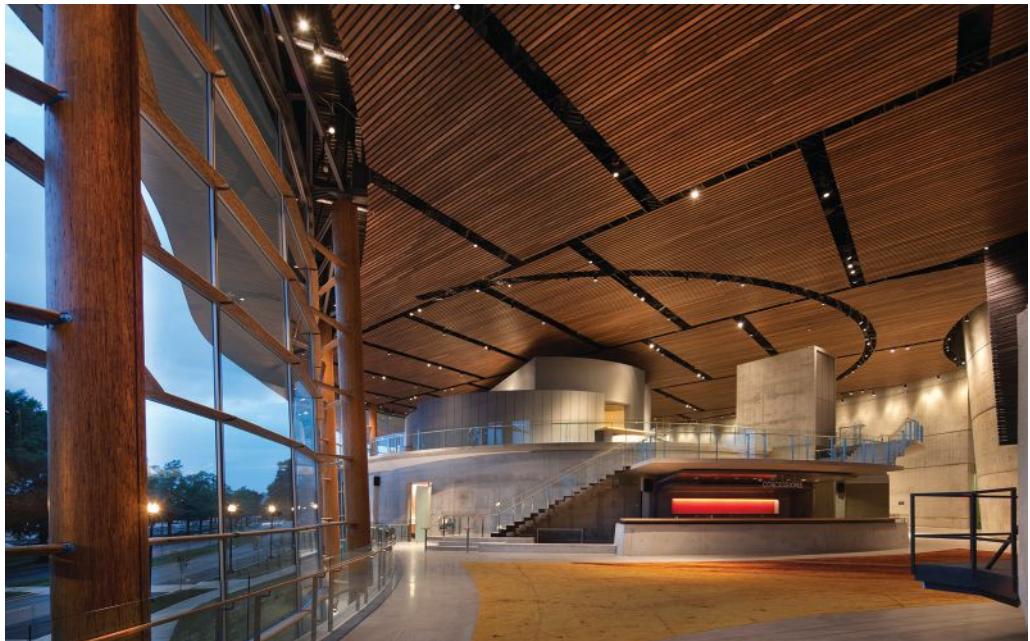
wood plays a role in delivering memorable acoustic experiences. Wood produces sound by direct striking and it amplifies or absorbs sound waves that originate from other bodies. For these reasons, wood is an ideal material for musical instruments and other acoustic applications, including architectural ones.

Wood is not as "acoustically lively" (translation: noisy) as other surfaces. Post-occupancy evaluations of buildings have revealed that poor acoustic performance is a common problem in buildings with large areas of hard, acoustically reflective surfaces. Ironically, such surfaces are frequently found in buildings designed to be sustainable, where the use of absorbent materials is minimized due to indoor air quality concerns.

In large buildings with hundreds or even thousands of occupants—for example, apartment buildings, condominiums, hotels or dormitories—every acoustic detail has a positive or negative effect on the quality of daily life. Wood-frame construction is efficient in buildings where sound insulation is required. In particular, wood doesn't present the impact noise transmission issues commonly associated with other types of construction.

University of Washington

In 2012, the University of Washington in Seattle added nearly 1,700 student housing beds by constructing three residential halls and



Arena Stage at the Mead Center for American Theater | Washington, D.C. | Bing Thom Architects
Photo by Nic Lehoux, courtesy of Bing Thom Architects



Peoples Health New Orleans Jazz Market | New Orleans, Louisiana | Kronberg Wall Architects Photo by Peter Vanderwarker

two apartment buildings, all of which include five stories of wood-frame construction over two stories of concrete. Designed by Mahlum Architects and winner of a WoodWorks Wood Design Award, the 668,800-square-foot project is the first of four phases planned to add much-needed student housing to the urban campus.

"Acoustics are important for any multifamily housing project, but especially for student housing," says Anne Schopf, FAIA, a design partner with Mahlum. "Mitigation measures must be weighed against budget, which is why we brought in experts from Seattle-based SSA Acoustics for the design of this project."

Because they knew single stud walls would not provide adequate performance, SSA recommended staggered stud walls between residential units. Since there is no rigid connection between the gypsum board on each side (except at the plate), a staggered stud wall performs better than a single stud wall. Double stud walls perform better than a staggered stud design because plates are separated by an air space, so they used double stud walls between residential units and common spaces (e.g., lounges, staircases, and elevators) and service areas.

In the floor/ceiling assembly, they paid careful attention to the installation of resilient channels, which are often one of the main causes of failed floor/ceiling assemblies from an acoustical standpoint. In fact, SSA says there's a difference of 8 to 10 IIC and STC points

between assemblies with resilient channels versus those without. Channel installation has fairly straightforward requirements; for example, screws for the gypsum board should never touch the framing behind the resilient channel.

"We used enhanced acoustical walls between rooms in the same unit," says Mohamed Ait Allaoua, a managing partner at SSA. "Although not a typical approach in multifamily buildings, this is important in student housing projects where people within a relatively small space have different needs—if one student wants to watch TV in the living room, for example, while another is studying in the bedroom."

Peoples Health New Orleans Jazz Market

For Atlanta-based Kronberg Wall Architects, one of the greatest challenges in designing this 14,000-square-foot contemporary jazz performance space, was acoustics. Located in an historic building in the birthplace of jazz—and home to the New Orleans Jazz Orchestra—the acoustics needed to add vibrancy and energy to the music being performed. According to firm principal Eric Kronberg, part of the design brief was also that the aesthetics of the space should "feel as warm as Louis Armstrong's horn sounds."

Working with acoustics consultants Kirkegaard Associates, Kronberg Wall used wood for a majority of the reflective surfaces both to create the desired sound and warm aesthetic.



Research is confirming that interiors with natural materials and views, exemplified here in the Greater Texas Foundation in Bryan, Texas, can lower stress and promote relaxation. Photo by Casey Dunn, courtesy of Dunnam Tita Architecture + Interiors

The team designed a carefully shaped pair of acoustic "clouds" over the stage combined with curved, wood-clad cheek walls that extend out into the hall. These surfaces are designed to reflect sound back to the musicians for on-stage communication and out to the audience for a more exciting experience.

The hall includes salvaged cypress planks, oiled instead of polyurethaned to maintain a slightly porous surface. "The oil finish allowed the highest pitch sounds to be slightly absorbed by the wood," said Kronberg. "This helped to avoid excessive brightness and made the overall sound warmer." All of the wood was installed tongue and groove with hidden fasteners so it performs acoustically as a solid surface.

Arena Stage at the Mead Center for American Theater

When Arena Stage at the Mead Center for American Theater reopened after a major renovation, it was the first modern structure of its size to use heavy timber components in the United States capital. It was also the first project in the U.S. to use a hybrid wood and glass enclosure to envelop two existing structures, both historic theaters from the original site.

Designed by Bing Thom Architects and winner of a WoodWorks Wood Design Award, the result is an ambitious space where the visitor experience is deeply affected by the innovative



Credit Valley Hospital in Mississauga, Ontario, is one of an increasing number of healthcare facilities making use of exposed wood to create a warm, natural aesthetic that supports their healing objectives. Photo by Peter Sellar, Tye Farrow of Farrow Partnership, courtesy of naturallywood.com

use of wood—where 18 parallel strand lumber columns, each 45 to 63 feet tall, brace a tall glass façade against wind loads and carry roof loads (up to 400,000 pounds) from the steel roof trusses, some as long as 170 feet.



This article continues on
<http://go.hw.net/AR816Course2>. Go online to read the rest of the article and complete the corresponding quiz for credit.

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QUIZ

1. The average North American spends what percentage of time indoors?
 - a. 25 percent
 - b. 50 percent
 - c. 75 percent
 - d. 90 percent

2. Wood can improve indoor air quality through which of the following attributes?
 - a. Hypoallergenic
 - b. Absorbs and releases moisture to maintain equilibrium with adjacent air, thus moderating humidity
 - c. Releases beneficial aromatic substances into the air
 - d. A and B but not C
 - e. B and C but not A

3. True or False: Wood can amplify or absorb sound, depending on design, and does not present the impact noise transmission issues commonly associated with other materials.

4. Which of the following wall construction typically provides the best acoustic performance?
 - a. Single stud walls
 - b. Staggered stud walls
 - c. Double stud walls
 - d. Concrete block walls

5. How do assemblies with well-designed and installed resilient channels compare to those without, in terms of IIC (impact insulation) and STC (sound transmission) points?
 - a. Assemblies with resilient channels and without perform about the same.
 - b. Assemblies with resilient channels perform slightly better, 1–2 points.
 - c. Assemblies without resilient channels perform slightly better, 1–2 points.
 - d. Assemblies with resilient channels improve acoustic performance by 8–10 points.

6. In some of the projects discussed in this course, which of the following designs used wood to improve acoustic performance?
 - a. Enhanced acoustic wood-frame walls to provide sound control within student housing units
 - b. Sculptural wood wall fins enhancing acoustical distribution in a round conference space
 - c. A wood seating riser to couple with the wood floor of a theater to transmit structure-borne low frequencies to the seats
 - d. All of the above

7. All of the following describe the phenomenon of "biophilia" EXCEPT:
 - a. Humans tend to be more relaxed in outdoor, natural environments such as forests, parks, and gardens.
 - b. In order to benefit from biophilia, humans must be in pristine outdoor environments with no man-made structures or other people within view.
 - c. Exposure to nature has been shown to lower blood pressure, heart rate, and aggression.
 - d. Nature increases the ability to focus attention and concentrate on tasks.

8. True or False: The physiological benefits of good design have been documented only in healthcare facilities, and "evidence-based" techniques are not applicable to other building types such as schools and offices.

9. In a study described in this course, stress as measured by SNS (sympathetic nervous system) activation was measured in different office environments with wood material and without wood material. Which of the following describes the study findings?
 - a. Stress as measured by SNS activation was lower in the wood room in all periods of the study.
 - b. Finish material in the office environment had no effect on SNS in any of the study participants.
 - c. Stress was lower in the wood room only for a small number of subjects.
 - d. Stress was lower in the room with plain white plastic finishes.

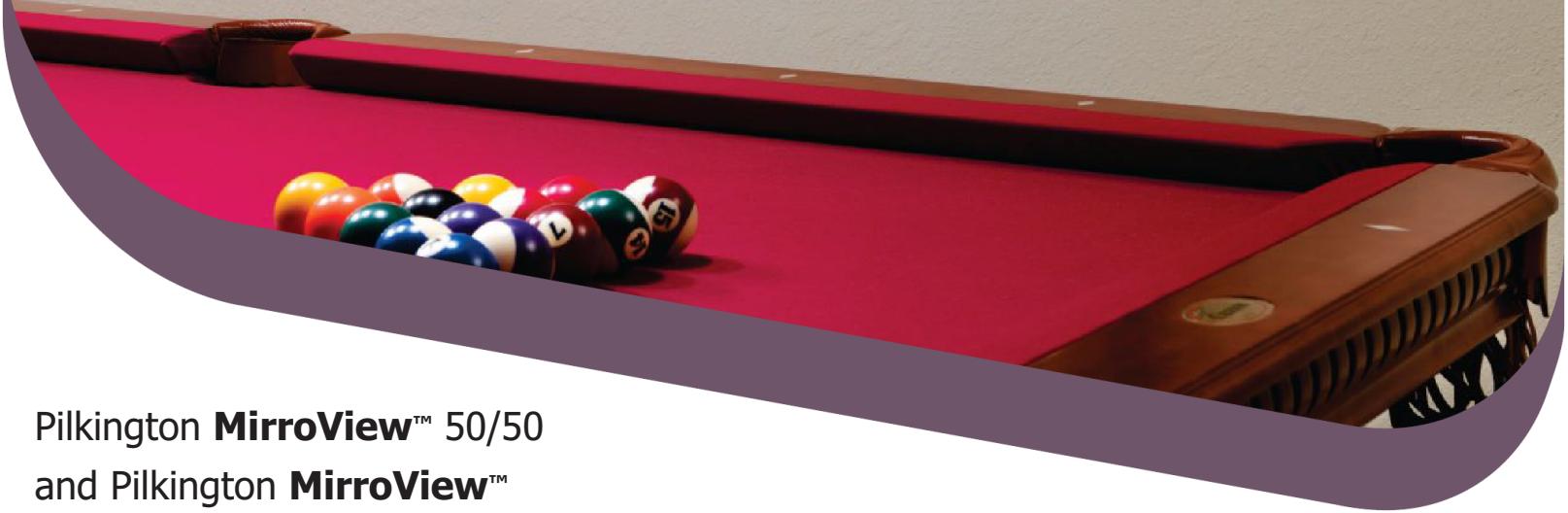
10. Which of the following statements is/are true of wood materials in buildings that are being demolished at the end of their service life?
 - a. Wood can be reclaimed and reused with minor modifications.
 - b. Reclaimed wood used as structural members can be reused for that same purpose.
 - c. Reclaimed wood can be re-milled and fashioned into other wood products such as window and door frames, curtain wall components and cladding.
 - d. All of the above



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“Wandering through the show, I found myself wondering whether it’s possible to reconnect with the psychedelic moment... or if we even want to.”

“Hippie Modernism” at Cranbrook by Karrie Jacobs

When I first read the exhibition title “Hippie Modernism,” I made some bad assumptions. I imagined the show would be a long overdue look at the built work of architects like David Sellers, AIA, who fled Yale University in the mid-1960s, bought some land in central Vermont, and started building whacked-out ski chalets without benefit of plans or drawings. I imagined it would involve the oeuvre of Steve Badanes, ASSOC. AIA, John Ringel, and Jim Adamson, who spurned their formal Princeton educations and formed a nomadic collective called Jersey Devil, which during the 1970s crafted eccentric houses around the country with descriptive names like Snail, Hoagie, and Airplane. I read the title and thought, *It's about time that these counterculture heroes got a museum show.*

When I arrived at the Cranbrook Art Museum in Bloomfield Hills, Mich., just outside Detroit, I realized that, to the show's curator, Andrew Blauvelt, the term “Hippie Modernism” meant something else entirely. The exhibition is mostly comprised of highly conceptual explorations by artists, designers, and architects. There's not a lot of built work, at least not in the conventional sense. The exhibition covers the years 1964–74, a period when, according to Blauvelt, “Architecture shifts from spatial concerns to temporal concerns.” Meaning: fewer structures and more love-ins. The show's subtitle, “The Struggle for Utopia,” is a good indication that the emphasis is on the fanciful rather than the concrete.

Blauvelt, formerly a design director and curator at the Walker Art Center in Minneapolis, spent five years organizing the exhibition for the center, where it was on display until February. At Cranbrook, where Blauvelt was recently named museum director, the show runs through Oct. 9, and then it heads, appropriately enough, to the University of California, Berkeley Art Museum in February 2017.

Anarchy and Its Resonance Today

Blauvelt was initially drawn to the period because of his fascination with Italian Radical architects, including Ettore Sottsass, an itinerant conceptualist in the 1960s who established himself in 1980s Milan as the progenitor of the Memphis design movement; the Florence-based collective of conceptual architects known as Superstudio; and the free-form school Global Tools that staged oddball educational workshops in various Italian cities in the early 1970s. The Radicals were decidedly anti-building, anti-product, and anti-profession.

In the wider world, of course, there's long been a fixation on midcentury style. But this is a different version of the period. “Hippie Modernism” is largely about the mess and tumult that never quite manifested as style: not daisy prints or granny glasses but dense schematics for bubble-shaped environments. In a way, Blauvelt has unearthed an aspect of the 1960s that has startling resonance today. Much of the show embodies the period's anarchic quality—the institution-burning, chaotic, occasionally frightening aspect. The shocking outbursts of violence that we've recently been experiencing and the newly conspicuous fragility of our societal bonds (not to mention a presidential candidate who is intentionally channeling Nixon) invites comparison to that turbulent decade a half century ago.

Part of Blauvelt's mission was to resurrect a lost era, one in which he sees the underpinning of the present moment, with special emphasis on hippiedom's interest in finding ways to circumvent conventional approaches to making and doing things. Never mind that the free-for-all that was the 1960s was generated by different currents (the war, the assassinations, the drugs) than today's often commercially engineered “disruptions.” “You can't have Airbnb,” Blauvelt tells me, “without crash pads and communes.”

Blauvelt was also motivated by a feeling that much of the aesthetic culture of the era has been intentionally



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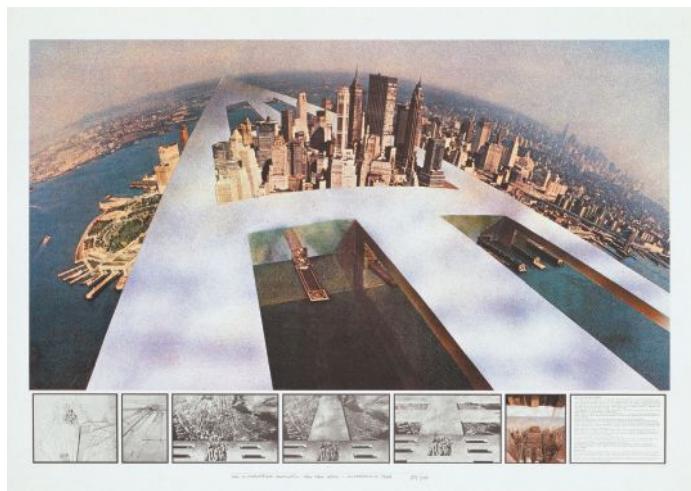


erased, that it was regarded as an embarrassment, that it was not welcome in any canon. He makes this clear in the exhibition catalog, a stupendous, oversized paperback (with a cover photo of a 1976 fire that partially destroyed R. Buckminster Fuller's Expo '67 dome) that mimics the feel, if not the graphic density, of the Whole Earth Catalog. In his catalog essay, Blauvelt writes that the art historian H.H. Arnason included a section on psychedelic art at the end of the 1968 edition of his survey, *History of Modern Art* (H.N. Abrams), contrasting minimalist art on one hand with "the surprise images of cosmic or mythic events" conjured up by liberal drug use. When the 1977 edition was released, all mention of psychedelic art had vanished. Similarly, a 1982 book called *Architecture Today* (H.N. Abrams) by theorist Charles Jencks included a chapter authored by historian William Chaikin called "Alternatives," covering all manner of experiments, built and unbuilt, including domes, inflatables, and sheds constructed on the beds of pickup trucks. That chapter, Blauvelt notes, was nowhere to be found in the 1993 edition.

The exhibition is Blauvelt's attempt to reinsert lost ideas into our cultural and aesthetic history. Perhaps too coyly, Blauvelt divided the show into three sections: Turn On, Tune In, and Drop Out. Predictably, there is lots of visual overkill, like mind-blowing paintings (for instance, the intricate, acid-fueled canvases of Isaac Abrams) and graphic design, including the familiar posters for Fillmore concerts and assorted be-ins, with hand lettering that jiggles like Jello. Here and there, little rooms are constructed on the gallery floors: one has wall projections of lava-lamp-ish blobs; another, Ken Isaacs' remarkable Knowledge Box, has 24 carousel projectors outside, showing *Life* magazine images in grids of four on the walls, floors, and ceiling.

Sottsass the Beat

Much of the exhibition, however, is an examination of the hijinks of the architects who, like everyone else from the mid-1960s through the early 1970s, were often too preoccupied with mind-bending to build things, or even to imagine things that could be built. Instead, we get lithographs and collages that are more Carlos Castaneda in spirit than Le Corbusier. My favorites are those that Sottsass made in the early 1960s, when he was floating around San Francisco, hanging out with Alan Ginsberg, Bob Dylan, and Lawrence Ferlinghetti. Blauvelt suggests that the architect, more commonly associated with Milan's refined materialism, was once a Beat. His series of lithographs, "The Planet as Festival," are finely drawn, detailed images of a whimsical science fiction utopia. One, called "Roofs under Which to



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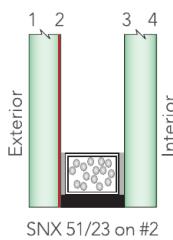


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Debate," shows a landscape dominated by Wonder Bread-shaped halls arranged like starfish arms around glass domes. Elsewhere in the show are Superstudio's photo-montages of "12 Ideal Cities" circa 1969, in which the planet is unaccountably layered with massive, hovering grids. These are darker in spirit than the drawings by Sottsass, but no more closely tied to reality.

For me, the star of Blauvelt's version of Hippie Modernism is the collective Ant Farm, founded in San Francisco in 1968 by architects Doug Michels and Chip Lord. Michels neatly expressed the mission of the group and the zeitgeist when he told an interviewer, "We wanted to be an architecture group that was more like a rock band." While Ant Farm is best known for Cadillac Ranch, a Stonehenge made of cars partially buried and standing on end, Hippie Modernism paints the group as road-tripping performance artists who erected a first aid shelter, a giant, pillow-y, inflatable environment, at the notorious 1969 rock festival at Altamont Raceway Park in Tracy, Calif. And much wall space is devoted to Ant Farm's 1971 plan to set up a nationwide "Truckstop Network," a chain of hippie KOAs that would provide sleeping facilities, food, and



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day care along with a “media dome,” a darkroom, and an “inter Truckstop computer information system.” The idea was that lots of people would travel the country in vans set up with audio and visual equipment and, along the way, they’d shoot documentaries that could be accessed through some sort of alternative media network. In short, Ant Farm was trying to will into being the kind of physical and technological interconnectivity that didn’t actually become real until some 25 years later.

Attempting to Capture the Empheral

Wandering through “Hippie Modernism,” I found myself wondering whether it’s possible to reconnect with the psychedelic moment ... and if we even want to. In a way, a movement that was all about the ephemeral and the hallucinatory wasn’t meant for posterity. I discovered that I don’t have a lot of patience for native messiness of the 1960s, the frenetic assemblages of every idea that can possibly fit on a page, on a canvas, or in a room. I am just old enough to have had firsthand experience with crash pads and communes, and I prefer Airbnb.

On the other hand, some of the more straightforward things that the hippies—although, alas, not the architects—were able to accomplish in the 1960s are pretty astonishing. For instance, the Dutch Provos, famous for distributing free white bicycles around Amsterdam, also initiated “The White Car Plan” in 1968, in which three-wheeled white electric cars were available for use to system members, a clear precursor to today’s car-share programs.

There is one small section of museum wall space that jibes nicely with my initial expectations for the exhibition. Drop City, a loosely organized artistic commune founded in 1965 by a bunch of art school grads, was built on seven remote acres in southern Colorado. The Drop City crew, like a lot of people, was inspired by Fuller, but they didn’t exactly know what he meant by “geodesic.” So they improvised, constructing irregularly shaped domes from discarded car roofs and other scrap materials. The result was a series of colorful, iconic buildings that earned Fuller’s approval—he gave the community his first ever Dymaxion award in 1966—and kickstarted a dome-building fad that was the genesis for myriad other strains of experimental building. To me, the photograph of those party-colored domes against the blue Colorado sky shows the exact spot where hippie meets modernism ... and it makes me long for the show I’d been hoping to see.



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Design Education in the Rust Belt by Amanda Kolson Hurley

In a seminar room overlooking Cleveland's Playhouse Square one day last winter, a dozen graduate students of architecture and urban design trained their attention on a screen. A guest lecturer, Kassie Hilgert, was joining them by video from Bethlehem, Pa. The director of a nonprofit called ArtsQuest, Hilgert described how her group had worked to transform part of a historic, disused steelworks complex into a busy arts-and-culture campus. The students jotted down notes as she emphasized the importance of tapping into authentic local traditions, getting government buy-in, and making public spaces as flexible as possible.

Adaptive reuse of rusting blast furnaces may not be a typical lesson for design students, but Cleveland is "not a place you come and spit out typical urban-design plans," says Jeffrey Kruth. He's a senior urban designer at the Cleveland Urban Design Collaborative (CUDC), a nonprofit community-design center that is part of Kent State's College of Architecture and Environmental Design; the center shares space with the university's graduate programs on Euclid Avenue downtown. Most members of CUDC's staff also teach, and it hires students to work on its professional projects. In other words, the studio—spread over the loft-like second story of the historic Cowell & Hubbard building, once home to a jewelry store—blends teaching, research, and the practice of social-impact design.

Kruth, who used to work at the Yale Urban Design Workshop, remembers that the studios there featured heady schemes for megacities like Shanghai that assumed rampant economic and urban growth. As for Cleveland, well, it has lost more than half of its population since 1950 and now struggles with one of the highest urban-poverty rates in the country. Being there "forces you to think in a different way," says Kruth, who has taught studios on urban systems, tactical urbanism, and Cleveland's Opportunity Corridor, a major transportation and economic development project.

As Terry Schwarz, the urban planner who leads the CUDC, puts it: "Students tap into the idea that when you're here, there are things that need fixing."

Part of the Local Brain Trust

Hands on, community-focused design has been part of American architectural education since Charles Moore set up the Yale Building Project in 1967. But for students now enrolled in Rust Belt architecture schools, there's a place-based difference. Cleveland, Buffalo, and Detroit roared to life during the 19th century to become some of the country's biggest and most prosperous cities. But the decline of industries like car- and steelmaking led to population shrinkage and social and economic problems, often couched by the media



Students with the CUDC's design/REbuild project help renovate a vacant house

in a simplistic narrative of "dying cities." In fact, Rust Belt or "legacy" cities have much to inspire students of urbanism. The architectural fabric is rich, there are plenty of sites waiting for new uses, and the heritage of industry (good and bad) is omnipresent.

Because architects tend to be relatively scarce and the challenges are abundant, student and faculty designers at many Rust Belt architecture schools have put down deep roots in the community, becoming part of a local brain trust of officials, nonprofit leaders, and citizens working on high-profile issues and projects. These students and designers tend to recast blight as vacancy, and vacancy as opportunity. They often think at the scale of the neighborhood or ecosystem rather than the individual building. "Design centers in cities like Detroit have been a tremendous resource," says Wendy Lewis Jackson, the interim co-managing director for the Detroit Program at the Kresge Foundation. "They're developing leaders who can go on in their careers to provide support for their local communities."

Ask Robert Shibley, FAIA, the dean of the University of Buffalo's School of Architecture and Planning, if being in a "legacy" city influences design education at his institution, and he doesn't hesitate: "You bet. We're a consulting firm that never goes home when the job's done," he says. "You've got the cheapest lab in the world, which is right outside your door. You have to imagine ways of building value into it."

Perhaps no other American architecture school has done that as much as Buffalo's has. In 1990, Shibley established an urban-design center within the school that created a comprehensive city plan as well as a set of strategic plans for downtown, waterfront, and Frederick Law Olmsted-designed parks. In 2011, the year Shibley became dean, the center became the UB Regional Institute. It has joined teams that worked on a federally funded roadmap for sustainable development in the Buffalo region and the Buffalo Billion plan, which guides Governor Andrew Cuomo's investment of \$1 billion in the area's economy.

The institute established a Citizen Planning

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School—a free program in key planning issues and tactics for any resident of Erie or Niagara counties—to foster broad, informed public engagement in local planning. It also helped rewrite the city's building and zoning codes. "The advantage of being in a Rust Belt city is, you're invited," Shibley says. "I'm on a first-name basis with most of the politicians in town. They know our programs and [our] work."

Not all of the work coming out of Buffalo is wonky plans—much of it is hands-on. As a thesis project several years ago, four students bought a dilapidated house for \$6,500, transformed it into a stylish 650-square-foot tiny home, and moved in. Current students work with Boston Valley, a local manufacturer of architectural terra-cotta, on developing new digital fabrication tools



The DCDC's TAP, which turned vacant lots into a graffiti art gallery

for the traditional craft. An architecture professor, Nicholas Rajkovich, recently created a bicycle-mounted weather station and gathered heat-island microclimate data as he rode through Cleveland one summer; he plans to partner with the CUDC to expand the project and outfit more bikes.

The CUDC, for its part, has led charrettes, drawn up neighborhood revitalization plans and a master plan for nearby Cleveland State University, and promoted the design of public spaces for cold climates, or "coldscapes." The center is helping the Cleveland Public Library rethink its mission for the digital age. In a city with about 20,000 empty lots, the CUDC has become known for its strategic approaches to vacancy.

For instance, the 1918 Detroit-Superior Bridge (now called the Veterans Memorial Bridge), which spans the Cuyahoga River downtown, has a lower deck once used by streetcars. It is now closed to the public, but in 2009, students from Kent State, working with teens from a local high school, filled it with benches, a bike path, hammocks, and lounge and picnic areas for a one-time public opening. Over two days, the bridge drew 8,000 visitors.

The center also teamed up with the City of Cleveland and other partners on a major initiative encouraging alternative uses of urban land, such as for agriculture and ecosystem repair. Grants totaling \$600,000 funded almost 60 demonstration projects. "Re-imagining a More Sustainable Cleveland" won a national award from the American Planning Association in 2012.

The CUDC recently completed its first design/REbuild project, the rehabilitation of a historic house next to a grassy lot in the St. Clair-Superior neighborhood. "Talk about something you can do in Cleveland and not in other places," Schwarz says. "There are houses everywhere." After two years of student labor, the house recently went on the market and is expected to sell for between \$40,000 and \$50,000. Thirty-thousand dollars of the proceeds will go to Kent State, and the remainder to the St. Clair Superior Community Development Corp., which owns the house. Next up is the rehabilitation of a rowhouse nearby.

Schwarz notes that prospective students are attracted to the program for different reasons, and faculty members don't emphasize shrinking-cities work over other areas. But the appeal it holds for some students is strong. Conner Karakul, an MLA candidate from Ohio who attended Kenyon College, considered leaving the region for graduate school, but thought that landscape architecture was important to Rust Belt cities. One of Karakul's projects was a dredge study undertaken with the Cleveland-Cuyahoga County Port Authority. Kent State, he says, "delves into things traditional landscape-architecture programs don't."

"It's Not Just About Building Buildings"

The Detroit Collaborative Design Center (DCDC) has operated out of the University of Detroit Mercy (UDM) for 22 years. Like the CUDC, it's a professional design firm, but instead of hiring students on a project basis, it trains UDM student interns as part of the school's co-op program—if they can get a spot. Admission is very competitive, says Dan Pitera, FAIA, the executive director. "There are so few [similar programs] in the country," he says, citing a residency program by Miami University, in Oxford, Ohio, in the Over-the-Rhine neighborhood of Cincinnati as another. "There's interest overall—not just in Detroit, but cities like Detroit: the Gary, Indianas; the Clevelands. [There is an] intensity of desire of students to work there."

The DCDC has turned the remains of a derelict house into a band shell, and is now turning another set of house remains into a set of pavilions (neighbors call it "the open-air building"). "Architects are just

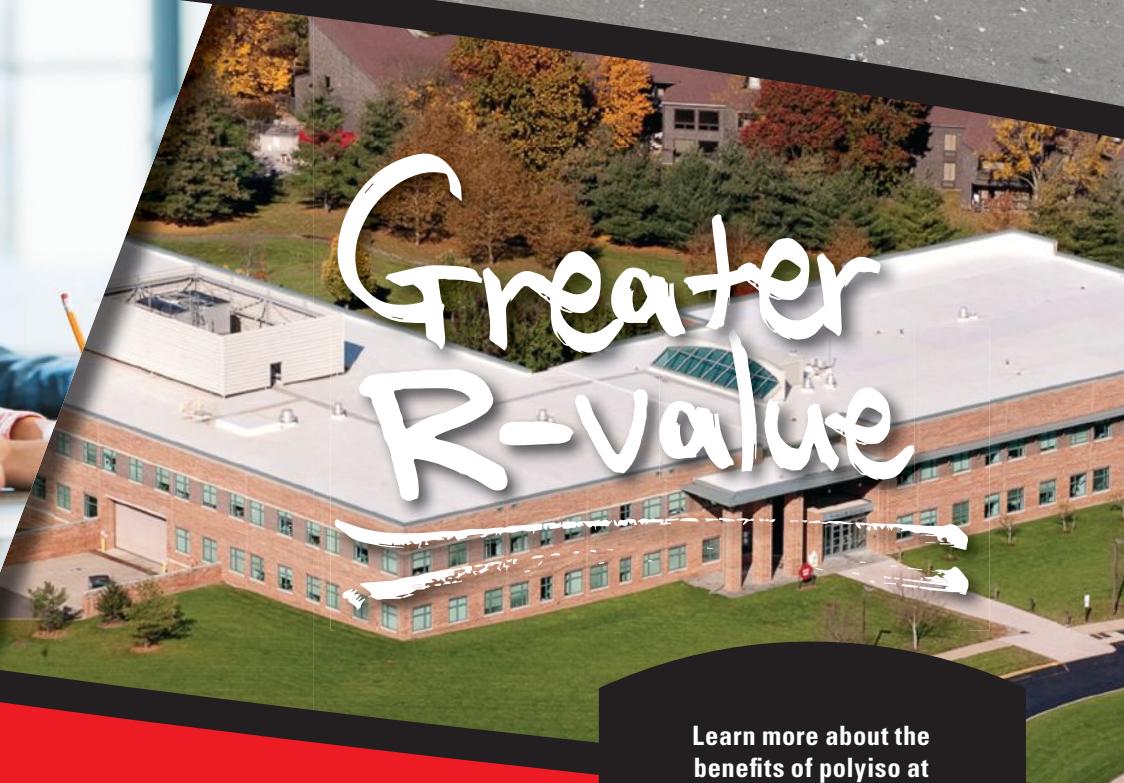


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beginning—if I can say this without sounding cruel—to understand it's not just about building buildings,” Pitera says. “When you have 23.5 square miles of open space, unused buildable space, you're not going to build your way out of this in a traditional way.”

Syracuse's Retreat

Not every architecture school in the region has made local revitalization a lasting focus of its program, however. Some years ago, under then-dean Mark Robbins, the Syracuse University School of Architecture moved to a warehouse downtown rehabbed by Richard Gluckman, FAIA. Imaginative new houses by up-and-coming architects popped up in city neighborhoods, and Toshiko Mori, FAIA, designed a new university building, the Center of Excellence, off-campus. There were excited headlines in the press about Syracuse's revival through architecture.

Today, after what some design educators call a formalist turn in the curriculum, Syracuse's students are back on campus and helping frame a new campus

plan, not a new downtown. The school has also expanded its program in New York City, where students can learn about community design by doing a housing project with a local nonprofit. “This kind of work is of great interest to us, it's just that we have another facility [in New York] that is better suited to our ambitions to send students out into the world,” says Michael Speaks, the dean of the school since 2013.

Indeed, a design school's identity can be shaped as much by its parent institution or combination of disciplines and programs as by its location. Syracuse is a private university with a stand-alone architecture school (ranked among the nation's best); Buffalo, part of the SUNY system, has architecture and planning under one roof, and emphasizes applied research. UDM is Catholic and offers a Master of Community Development through its architecture school.

Counterintuitively, perhaps, Shibley and Pitera have found that hyperlocal success is what unlocks opportunities farther afield. This past March, Kent State students traveled to Cuba to study the Nico Lopez

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oil refinery site on Havana Bay and consider possible scenarios for its future. In April, two Havana-based architects, Ernesto Jiménez and Sofía Márquez Aguiar, made the reverse trip, flying to Cleveland to assess the site of a coal plant on Lake Erie that may soon be demolished. After Pitera lectured in Portugal about the

DCDC's The Alley Project (TAP), which turned an alley in southwest Detroit into a graffiti gallery, two Detroit street artists were invited to visit Lisbon. Shibley spoke about Buffalo's regeneration efforts at a conference in South Korea, and now three Buffalo faculty members are doing work there. He sums up his philosophy this way:

"Stay home, do something really well, promote it, get the very best return from it, and it will take you other places."

The Hip Factor

Maybe it's time to stop thinking of Rust Belt cities as outliers. The bristling skylines of London, New York, and Hong Kong notwithstanding, untrammeled growth is not the sole urban operating principle. Cities contract and neighborhoods fade. Municipal budgets erode. Every city has to contend with at least one of these conditions at some time or another.

Meanwhile, many legacy cities are becoming hip. Since 2000, downtown Cleveland has seen a 76-percent increase in residents aged 25 to 34. In Buffalo, that cohort grew by 22 percent between 2007 and 2014. Detroit's Millennial population has risen modestly, too. Schwarz and Shibley talk about young designers sticking around after graduation. The cost of living is low and opportunities abound—although not necessarily the conventional kind.

How long will this continue? And how will educators respond if the city is no longer a lab wide-open to them, but prized real estate? Shibley says his school is already positioning itself to tap into emerging industries in Buffalo, like robotics. But realistically, it's unlikely that the surplus land and buildings in these cities—and chances for committed designers to improve the lives of residents—will run out any time soon. "I came to Buffalo in 1982. I thought maybe it was a five-year gig," Shibley recalls. "I don't think I'd been here more than two years before it was perfectly clear to me that I loved this place. It had every [issue] in the world that I ever wanted to study, but I could get my arms around it. That's infectious."

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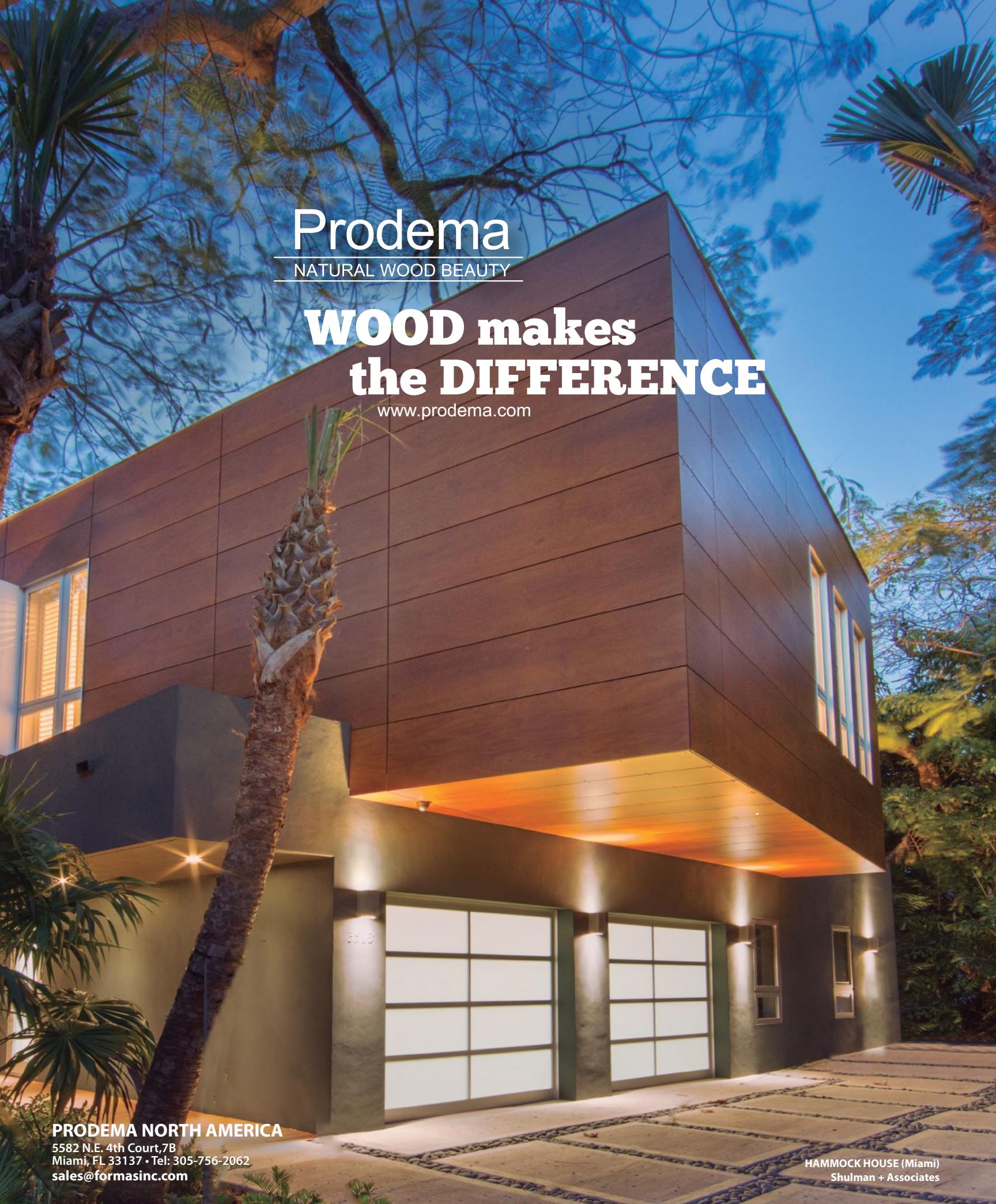


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#GREATMINDSTHINKPINK

A photograph of a modern house at dusk or night. The house features dark wood siding on the upper levels and a light-colored concrete or stucco base. Large windows on both levels are illuminated from within, casting a warm glow. A prominent feature is a large overhanging eave supported by slender columns, which is also illuminated from below. A tall palm tree stands in front of the house, its fronds silhouetted against the sky. The sky is a deep blue, suggesting twilight.

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“I’m curious, however,
as to how you pick a
creative architect.
Ninety-five percent
of them are, of course,
businessmen,
organizers, salesmen
and hucksters.”

The Berkeley Study on the Creative Architect by Mimi Zeiger

It's easy to picture Philip Johnson seated in his regular booth in the Grill Room at the Four Seasons; his back to the windows, his bespectacled eyes on the door, he's confident and at the top of his game as he presides over a room of his own design.

Now imagine him jittery and hesitant in a different room on a different coast. It's the late 1950s and, faced with a University of California, Berkeley researcher trying to uncover the secrets to his creativity, Johnson uses his ample verbal and social gifts to upend the interview. In a typed report, the researcher would later write, "He showed many classic features of the manic: self-centered, irritable, jumpy, flight of ideas, arrogance, use of humor to defend against serious consideration of anxiety-producing topics."

It's difficult to believe that Johnson would submit to such an uncomfortable interrogation, but he was one of 40 architects who willingly spent a weekend taking tests and filling out questionnaires that delved deep into the personality and processes behind a creative mind. Developed under the auspices of the Institute of Personality Assessment and Research (IPAR) at UC Berkeley, the study set out to uncover both the psychology and the illusive process of creative acts. Led by Dr. Donald MacKinnon, IPAR's research grew out of earlier testing of Air Force officers and involved subjects whose professions ranged from free-spirited

Architect (The Monacelli Press, 2016), chronicles the IPAR research. The study revealed that each of the celebrated architects had something in their backgrounds that they had to overcome: lack of money, repressive parents, or poor health. "To declare in no uncertain terms the core trait of the creative person: The answer is courage," Serraino writes.

Selecting the Participants

Over four weekends in 1958 and 1959, groups of architects arrived at a large house on Piedmont Avenue just off campus where the testing was conducted. Johnson, Eero Saarinen, Louis Kahn, Richard Neutra, I.M. Pei, FAIA, and other designers were invited to participate after an elaborate selection process that not only polled panels of architecture academics and editors for their top picks, but also ranked practitioners' prominence based on media coverage.

Serraino's book is remarkable in its reproductions of bureaucratic artifacts from the study, including examples of mimeographed questionnaires used to evaluate possible participants. Architect William Wilson Wurster, a member of the nomination evaluation committee, writes of Paul Rudolph, who was then the newly appointed chair of the Department of Architecture at Yale: "Youngish—Mannered—Egotistical—Perhaps thin in real content." Nominator and California modernist Joseph Esherick praised Johnson's writing: "He's a tremendous perfectionist and no matter what hat he happens to be wearing at the moment does everything extremely well."

Johnson, for his part, initially declined his invitation to participate and used his cutting wit to skewer the study's premise. "I'm curious, however, as to how you pick a creative architect. Ninety-five percent of them are, of course, businessmen, organizers, salesmen and hucksters."

During the course of the IPAR weekends, the architects were subjected to numerous verbal tests, each calibrated to measure aspects of the creative personality and process. But there was just one graphic procedure undertaken by the architects: The Mosaic Construction Test, developed by IPAR researcher Frank Barron to measure aesthetic sensibility. Subjects were given 1-inch colored squares in 22 different colors and asked to create a composition. In some notable cases, the results reveal (or rather confirm) what we now recognize as architectural signatures. Johnson, in a proto-postmodern move, channeled Mondrian in red, black, and white; Kahn chose a muted palette of brick-like browns and reds; and Saarinen created a grid of white—and only white—squares. "Saarinen wanted to be different," explains Serraino. "People who were

Technology (Piranesi)	Visual Form (Delight)	Planning (Commodity)	Human Awareness and Social Purpose
5	5	5	5
4	4	4	4
3	3	3	3
2	2	2	2
1	1	1	1

William Wilson Wurster's questionnaire nominating Philip Johnson for the study

to problem-solving: writers, scientists, mathematicians. Yet it was the group of architects—some of the finest in postwar America—that best exemplified the convergence of both analytical and artistic skills.

"What are the motivations that make people do what they do?" asks Pierluigi Serraino, a Berkeley-based architect and educator whose book, *The Creative*



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uncreative would fall back into formulaic patterns. Creatives take the lead."

Or, as MacKinnon summed it up in his 1964 paper, "The Characteristics of Creative Architects": "The truly creative person knows who he is, where he wants to go, and what he wants to achieve. In [German psychoanalyst] Erik Erikson's phrase, the creative person has solved the problem of his own identity."

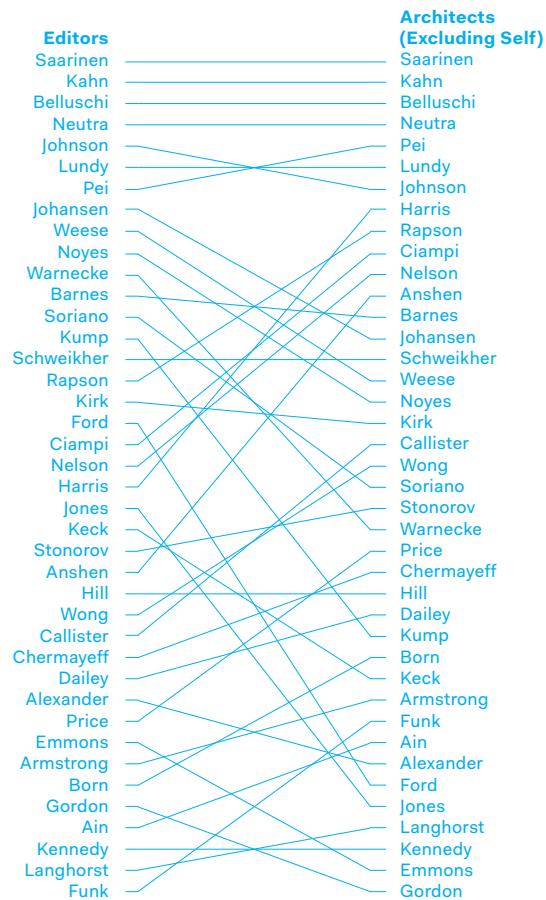
IPAR's conclusion—that the creative personality comes from knowing one's mind and vision in the face of personal struggle—is reflected by the interview reports. Neutra is described as thinking of himself as a Superman able to solve all problems. The interviewer, however, discerned a palpable fear of abandonment and suggested that the architect's domineering personality was a coping mechanism. In the case of Raphael Soriano, his report pinpointed his father's loss of fortune and abusiveness as the drive behind the architect's need for originality. "In observing these subjects, bombarded with tests in the Berkeley lab, the psychologists learned what theory alone could not confirm," writes Serraino. "Creative individuals have a very important pattern in common: they consistently safeguard their self-determination in order to stay their course and pursue what interests them no matter what, in a fierce escape from conformism of thought and behavior."

A Homogeneous Sample

MacKinnon published IPAR's research, along with examples of mosaic tests, in national magazines such as *Architectural Record* and *Scientific American*. Serraino writes that the experiment findings influenced the nascent technology industry in nearby Silicon Valley, and eventually entered mainstream culture through lectures and radio shows, which goes a long way in explaining why the results sound so familiar. Today, the individualistic signifiers of creativity populate everything from advertising to app development, from bespoke fashion to the share economy. There are meditation workshops to unleash creativity, books on design thinking, and businesses of all kinds that value anything that will produce "out of the box" ideas. "A key recurring word is 'innovation,'" says Serraino of IPAR's reports, "but now it's tainted with commerce."

In hindsight, perhaps the most glaring thing about the IPAR study is the homogeneity of the participants. True to the demographics of the postwar profession, all were male, and most were white and middle-aged. At 36, Sarasota School architect Victor Lundy was the youngest and, at 67, legendary modernist Richard Neutra was the oldest. Notably, nearly all were sole practitioners with their name on the door.

One can't help but wonder if these men truly embodied creativity or if the narrowness of the sample produced an equally narrow narrative of creative personality, which poses a false model for the pluralisms of the 21st century. Consider Bjarke Ingels. He certainly epitomizes the creative persona sketched out by MacKinnon. But his firm, Bjarke Ingels Group, tries for a more international, multidisciplinary, multigenerational, and collaborative approach than the standard midcentury architecture office. "For an architect, [creativity] means attempting to create the physical framework that allows us to live the way we want to live—rather than being forced into lifestyles imposed upon us by our societal structures or physical environment," Ingels says. "I love the definition of complexity in computer programming: Complexity is defined as the capacity to communicate the maximum amount of information with the minimum amount of



Architecture editors—and the architects themselves—ranked the study participants in order of creativity; Saarinen topped both lists.



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Mosaic Construction Test



data. In other words, to express more with less. This is what we strive for: to facilitate the maximum freedom of human expression with the least possible means.”

Ann Lui, the founder with Craig Reschke, AIA, of the Chicago-based practice Future Firm, recalls something Denise Scott Brown, HON. FAIA, wrote in a 1981 article in the *Journal for Architectural Education*. “The path of rationality will take us far, but not all the way,” the architect wrote. “We come at last to a gap. The implications of creativity—the need to ‘jump’—cannot be avoided.” It was that illusive jump that IPAR had hoped to explain.

There’s a reminder here of the tumultuous

decade between 1959, the year of the study, and 1969, the year Scott Brown joined Venturi and Rauch—a decade in which the notions of identity, diversity, and collaboration were rapidly expanding. “Creativity is about constructing meaning within an ever-shifting cultural landscape,” says Barbara Bestor, AIA, of Bestor Architects. “It is a way of communicating and imagining new ways of being in the world.”

Both Bestor and Elena Manferdini of Atelier Manferdini define creativity not as an expression of difference, *per se*, but rather as an act connected to outside factors. “Artists are individuals that belong to their time,” Manferdini says. “Their unique ability is their sensibility to absorb contemporary culture and, in the case of architects, formalize it as built environment. Architects, even when working on personal projects, end up bringing to reality the latent collective visions of our time.”

The Ethics Problem

The IPAR testing weekends in Berkeley were not all questionnaires and Rorschach tests. Group discussions were conducted in a kind of cocktail party format, where tricky topics were put to each group of gathered architects. Indeed, Serraino uncovered a 35-minute recording of Johnson, Saarinen, Lundy, Gregory Ain, and Ernest Born tackling an “Ethics Problem.” They were asked respond to a scenario where client imposed a do-or-die change to an important commission. The question: Do you keep the project and make the changes that undermine the vision of your design? Or do you walk away?

The IPAR study used the test to identify personality traits around ego and professional expertise. But today, the subject of ethics resonates beyond just the realization of a perfect architectural vision, and has expanded to include human rights at home and abroad, as well as architecture and urban design’s role in responding to homelessness and systemic discrimination. Peter Zellner of Zellner Naecker Architects suggests that it’s no longer possible to treat architecture as solely an aesthetic pursuit. “I define architectural creativity as a social and political act, not exclusively an artistic and personal activity,” he says.

In Berkeley, after a couple of martinis and a lively round of debate about the “Ethics Problem,” Saarinen said he’d walk off the project, thus preserving his professional design integrity, since a building lasts longer than any individual. Johnson balked at the verity of the question. “It doesn’t happen that way in architecture,” he replied. And, with a nod to the very clichéd description of the heroic architect we hold today, accused Saarinen of reading too much Ayn Rand.

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**Mechanics Hall
Lausanne, Switzerland
Dominique Perrault Architecture**

TEXT BY NATE BERG
PHOTOS BY VINCENT FILION





Like the work happening inside it, the new building for the mechanical engineering department at the École Polytechnique Fédérale de Lausanne (EPFL) in Switzerland is a study in movement. Its façade of metal mesh is articulated in offset accordion folds, like the tumbling blocks of a Jacob's ladder toy caught mid-fall. Designed by Paris-based Dominique Perrault Architecture (DPA), the building seems on the verge of straightening out its hinges and standing up, or, perhaps, slinking down into a flatpack origami fold.

The 223,000-square-foot building behind the façade is a relatively simple collection of offices and labs arranged around a central atrium. But when the building's automated climate control systems kick in, the façade comes to life as its slanted mesh panels slide to the sides, selectively opening perimeter offices to the sun. For all this metal, it's surprisingly light, and strays far from the dark, panelized 1970s building it replaced.

The building is part of an effort at EPFL to break from the aesthetic guidelines laid out in a master plan from the 1970s, resulting in a growing assemblage of contemporary architecture. Across from the new mechanical engineering building sits the Rolex Learning Center by the Japanese firm SANAA, laying across 5 acres of the campus and perforated with holes like concrete Swiss cheese. On the other side of a plaza is a narrow, canoe-like building more than 800 feet long designed by Kengo Kuma and Associates, which is set to open this fall. DPA has contributed two other buildings to this collection, a renovation of an old library into an administration building, with vertical bands of color striping its otherwise shiny black façade; the firm's forthcoming Teaching Bridge has yet to break ground. These new buildings, says Perrault, HON. FAIA, (who is himself a professor at EPFL), are creating more of an urban feel on the campus by emphasizing their ground floor access and orientation to one another. "We have a natural relationship between the buildings and the public space and the space around," he says. "It's more smooth. It's more comfortable."

That the new Mechanics Hall works as well as it does in the assemblage has as much to do with how the new building relates to the site as it does with how it responds to the pre-existing buildings. In fact, it connects directly with one of these older structures—which shares the modularized porthole-window and metal-panel motif that typifies the existing campus buildings—through walkways on each of the four floors. In what he calls “a special geometrical echo” of the 1970s vision for the campus, Perrault’s design uses the dimensions of the older building’s cast-aluminum panels, flipped vertically instead of horizontally, for the pieces of his own automated façade.



Previous Spread: View of entry from south

This image: View from northwest, with contiguous existing building at left



The factory-built steel-framed façade panels are covered with aluminum mesh and lined up in sets of three, with each set slanted away from the building at alternately its top or bottom. Two of the panels in each set can move along a track to slide behind the third, which is stationary. When they're opened—either by the building's climate control system or manually by the building's users—plentiful light is admitted.

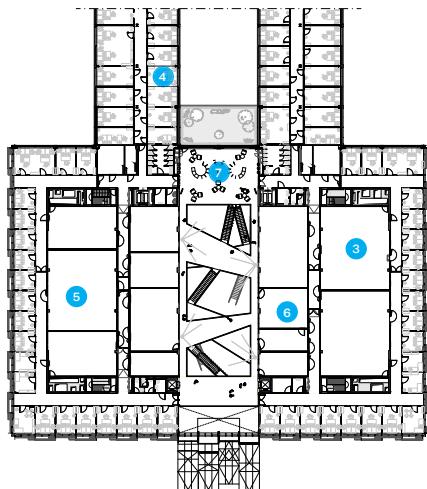
Natural light was important to Perrault's design, in part because the building itself is so big, measuring 197 feet by 236 feet. To ensure that natural light penetrates into the cavernous floor area, the design emphasizes floor-to-ceiling windows on three of its perimeter walls, white and gray interiors, and large skylights over a spacious atrium that sits at the center of the scores of enclosed offices and labs. "You don't feel the deepness of the building," Perrault says, and the light that filters into the atrium creates an ambiance that he calls "a little bit cinematic."

He considers the atrium the center or brain of the building—both for that ambience and for its programmatic uses. Much of the space is an open void, allowing light from the skylights to spread through the building. But each level above the ground floor has bridges and patio-like outcroppings with seating and tables that project into the center, creating places which the building's scientists and engineers can use as informal meeting rooms.

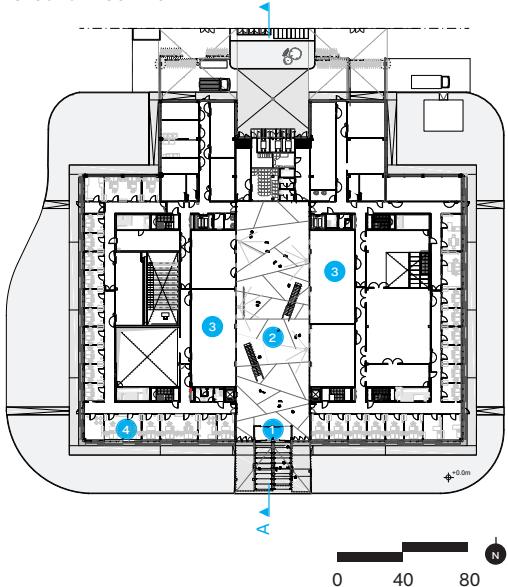
But it's more than just a gathering space. The atrium also provides a very public system of circulation. Two staircases connect each floor, and though their nonorthogonal orientation appears somewhat haphazard, one set proceeds more-or-less directly from the first floor to the fourth floor in a diagonal line. The second set provides a tangled route, requiring one to walk a ways along the balconies on each level to reach the stair to the next. Perrault wanted to provide a variety of options, and he argues there's value to having many ways to move throughout the space.

In fact, the atrium and its encouragement of movement, whether circuitous or direct, throughout the structure is key to what Perrault hopes the building will accomplish: that the way the scientists and engineers walk around the space will organically engender more interaction between them. The gathering spaces within the atrium, be they formal or informal, become places for scientists and researchers to get out of their labs, converse, and potentially spark collaboration on research or projects. Perrault is hopeful those interactions will lead to new ideas and better science. "This space is a sharing place," he says, "and that is the most important concept and statement about this building."

Second-Floor Plan

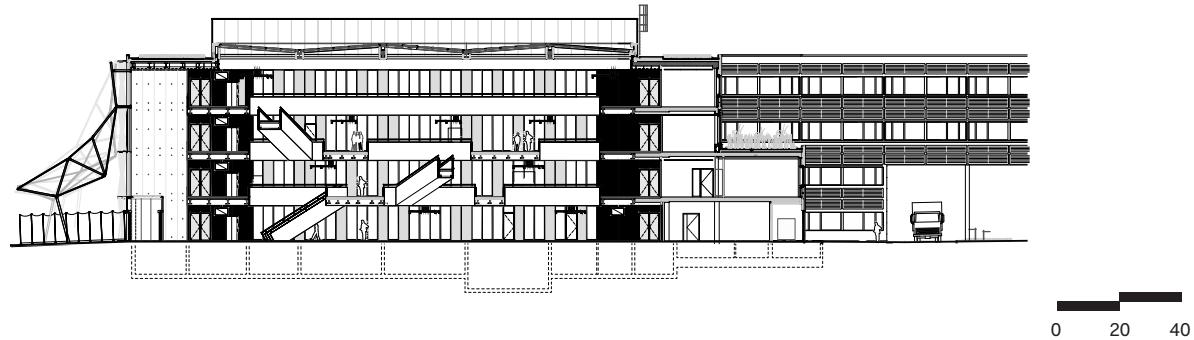


Ground-Floor Plan

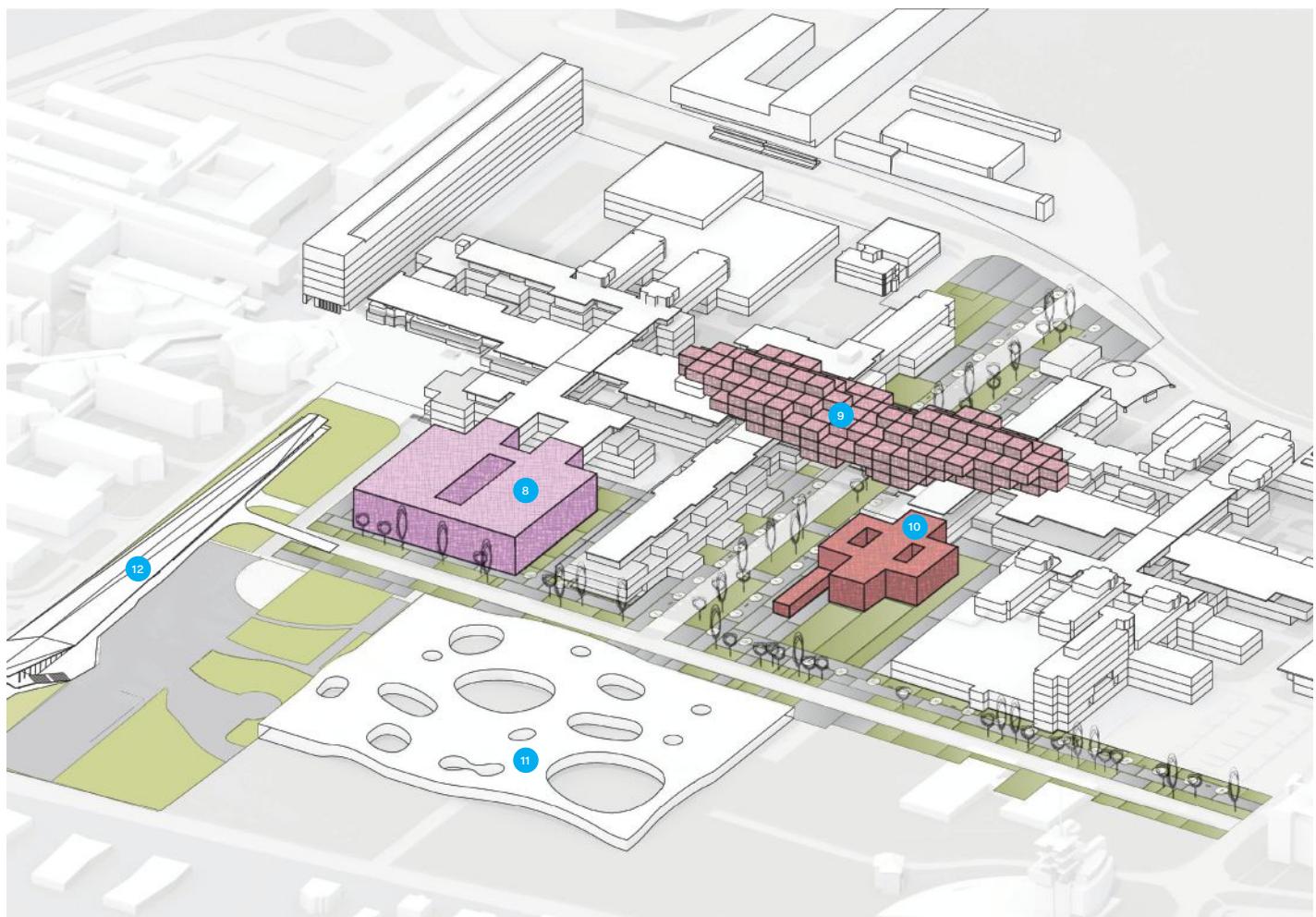


- | | |
|---|--|
| 1. Entrance
2. Atrium
3. Laboratory
4. Office
5. Classroom
6. Conference room
7. Lounge | 8. Mechanics Hall,
Dominique Perrault
Architecture
9. Teaching Bridge,
Dominique Perrault
Architecture (unbuilt)
10. Administrative Building,
Dominique Perrault
Architecture
11. Rolex Learning Center,
SANAA
12. Under One Roof
Building, Kengo Kuma
and Associates |
|---|--|

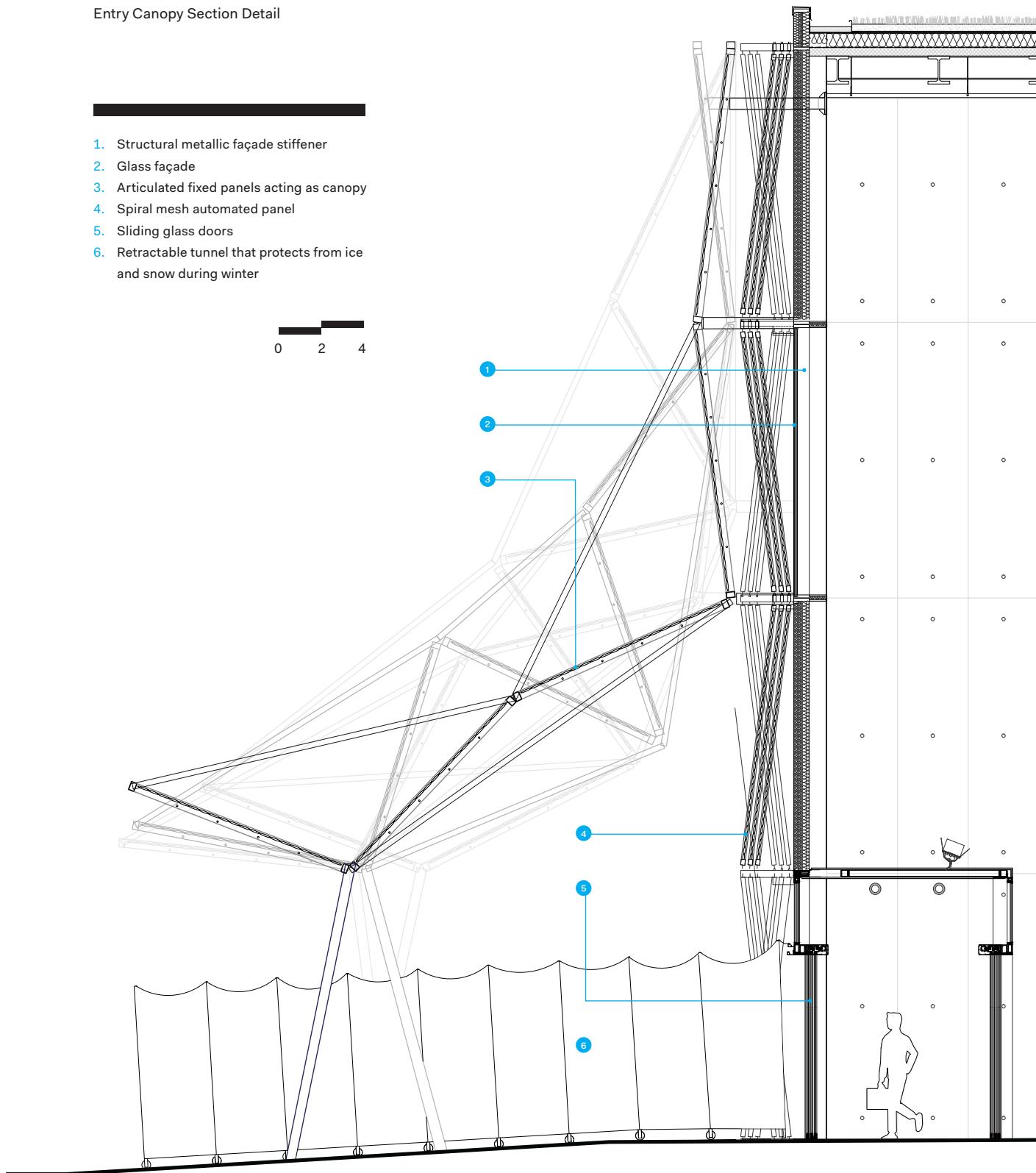
Section A-A₁



Site Diagram



Entry Canopy Section Detail



Articulated entry canopy, view from east







Opposite: Central atrium with stairs and lounge areas

Above: Classroom with metallic-painted acoustic tile ceiling

Hallway with porthole windows and painted wayfinding



**Project Credits**

Project: Mechanics Hall, Lausanne,
Switzerland

Client: Swiss Confederation represented
by the Council of Polytechnic Schools,
delegation for the operations: EPFL—École
Polytechnique Fédérale de Lausanne

Design Architect: Dominique Perrault
Architecture, Paris · Dominique Perrault,
HON. FAIA (lead architect); Giovanna Chimieri
(project manager); Richard Nguyen, Nanako
Ishizuka (architects)

Local Architect: Architram
Interior/Lighting Designer: Gaëlle Lauriot-
Prévost

Structural Engineer: Daniel Willi

Electrical Engineer: Betica Technology
Solutions

Civil Engineer: Induni & Cie

Facades Engineer: Preface

Size: 223,000 square feet

Cost: Withheld

Potato Head Hong Kong Hong Kong Sou Fujimoto Architects

TEXT BY DEANE MADSEN

PHOTOS COURTESY POTATO HEAD HONG KONG

Jakarta, Indonesia-based lifestyle brand Potato Head enlisted Japanese firm Sou Fujimoto Architects to design a new 8,000-square-foot multipurpose space in Hong Kong. Working with the company's in-house design team, Fujimoto broke the plan into discrete areas—including a café, shop, bar, restaurant, music room, and vinyl record library—that combine to form a varied interior. "In this project, we wanted to create space that has no clear definition of boundary," Fujimoto says. To that end, a latticework of shelves in the retail area uses the same bracketing technique Fujimoto employed in his 2013 Serpentine Gallery Pavilion in London, defining space while remaining visually permeable.



ATO HEAD



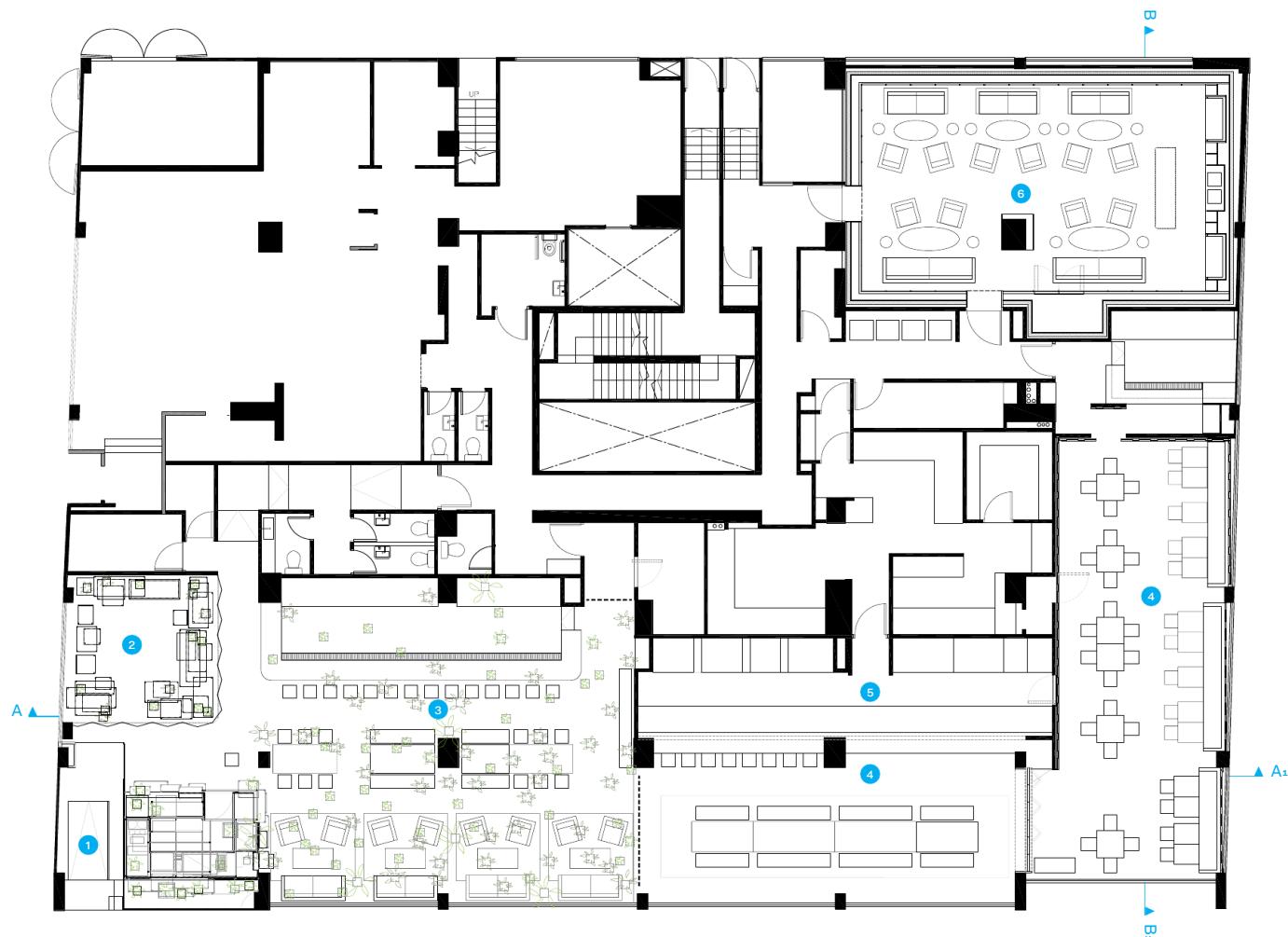
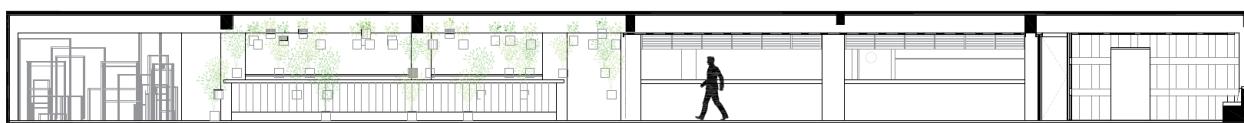
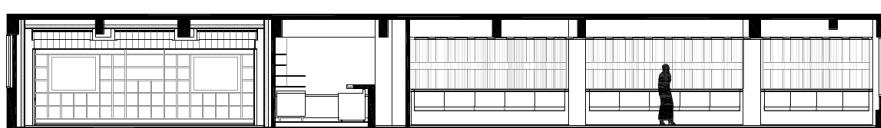


Inside the first of two dining rooms for Potato Head's Kaum restaurant, teak tables and hand-painted timber panels that line the ceiling nod to the Indonesian menu. Along the storefront that lines the north edge of the dining room, vernacular security grates are reimagined as geometric patterns of white steel embedded into the glazing. "We looked at the city and lives of people in Hong Kong," Fujimoto says. "We took the patterns of the urban fabric, the small and compact scale of the city, and reinterpreted those elements into our design."

- 1. Entrance
- 2. Retail
- 3. All-day café and bar
- 4. Kaum dining rooms
- 5. Kitchen
- 6. Vinyl room



Floor Plan

Section A-A₁Section B-B₁



The second Kaum dining room provides a warm and intimate contrast to the daylit spaces along the building periphery. The walls and ceiling of the space are lined with more than 700 of the timber panels, which were hand-carved and painted by the Toraja, an Indonesian indigenous group, with an eye toward passing the traditional craft to future generations. They were commissioned for Potato Head Hong Kong to showcase the company's Indonesian roots.

In the all-day café, mirrored planter boxes hang from the ceiling above groupings of midcentury modern furniture. “The [stacked] shelves and furniture define the boundary of the space,” Fujimoto says, “but they are also the space itself.” The assemblage references a theme Fujimoto revisits often in his work: “Architecture rests not only in designing objects and spaces, but rather in designing environments that consist of the entirety of our surroundings. We have to go back to a point of thinking of nature and architecture as equal.”

Project Credits

Project: Potato Head Hong Kong,
Hong Kong
Client: PTT Family
Design Architect: Sou Fujimoto Architects,
Tokyo · Sou Fujimoto (chief designer), Jane
Luk (project leader), Joanne Chen (junior
architect)
Builder: Together Contracting Co.
Lighting Consultant: Switch
Acoustic Consultant: MKSA
Audiovisuals: LSI Services
Size: 8,000 square feet
Cost: Withheld





**Municipal Museum Abade Pedrosa and International
Contemporary Sculpture Museum
Santo Tirso, Portugal
Álvaro Siza Vieira and Eduardo Souto de Moura**



TEXT BY KATIE GERFEN
PHOTOS BY JOÃO MORGADO



With origins in the 10th century, it isn't so much that the Monastery of São Bento (St. Benedict) took root in the northern Portuguese city of Santo Tirso, but rather that the city of 70,000 grew around the monastery. The current monastic complex dates back to the 1700s, and 300 years later, a wing was devoted to the city's new archaeological museum—with artifacts collected by Abbot Joaquim Augusto da Fonseca Pedrosa.

Enter the 21st century, and the city wanted to usher in (another) new era for the monastery site, this time in the form of a revamped Municipal Museum Abade Pedrosa (MMAP) and an International Contemporary Sculpture Museum (ICSM) housed in a new building that would complement, but not compete with, the national landmark. For that they turned to two of Portugal's native sons, Álvaro Siza Vieira, HON. FAIA, and Eduardo Souto de Moura, HON. FAIA. Both Pritzker Prize winners, the long-time collaborators run separate practices out of the same building in Porto.

The result of this latest collaboration is a sensitive restoration and reworking of the archaeological museum on the second floor of a wing of the existing monastery. The architects preserved plaster walls and masonry window surrounds in the vaulted main corridor and in gallery spaces that line the east side of the wing. Each gallery features custom glass vitrines, warm wood floors, and revamped lighting beneath white-painted ceilings. The easternmost room was converted to a presentation theater. Minimal, exposed-bulb lighting fixtures run the length of the corridor on the wing's west flank.

Across the vegetated cloister, and connected via a new shared lobby, is the larger intervention: A low-slung, minimal white volume that houses the new sculpture

museum. The cornice line of the old monastery complex defines the height limit for the new structure, whose angular siting is a result of hugging the sloping ground plane. The sculpture museum takes cues from the existing monastery complex with white walls and a terra-cotta-colored ceramic tile roof. As seen from the higher hills of the city, the diagonal roof line blends seamlessly with the rhythm of the historic structures. But the absence of ornamentation, combined with contemporary construction methods—concrete walls are clad in a composite insulation system incorporating high-density mineral wool, finished in a coating of white-painted plaster—bring a decidedly modern aesthetic to the site.

Inside the 23,215-square-foot addition, white gypsum-board walls are finished with a rich gray marble paneling that rises to varying heights on the walls in the lobby, public areas, and circulation spaces. The same stone is used on the floors throughout, and, with impeccable detailing, to line the stairs, balustrades, reception desk, and cafeteria counter. Sculptural gypsum-clad cut-outs in the concrete slabs around the stairs allow light to permeate the lower-level exhibition space.

The material choices in the sculpture center are cool in tone and offset the warmer tones in the archaeological museum. So while the new architecture harmonizes with the old, each retains its own character, helping to visually differentiate the two institutions for visitors. And those visitors will continue to come. The new design by Siza and Souto de Moura, with its simultaneous celebration of local heritage and Modernism, reinvents the Monastery of São Bento as a lasting cultural center for the city.

Section A-A₁

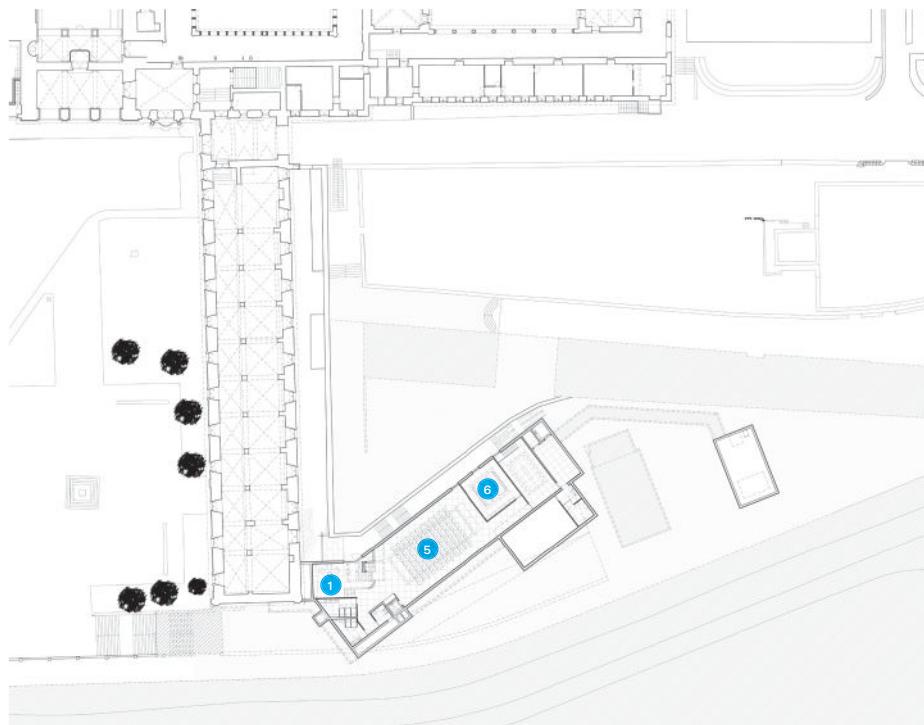


Upper-Level Plan



Previous Spread: View from the south

Lower-Level Plan

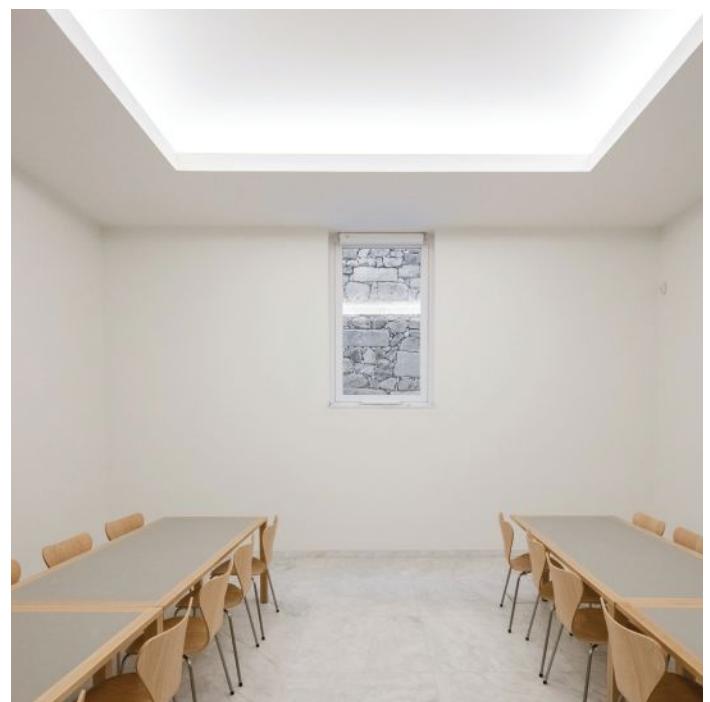
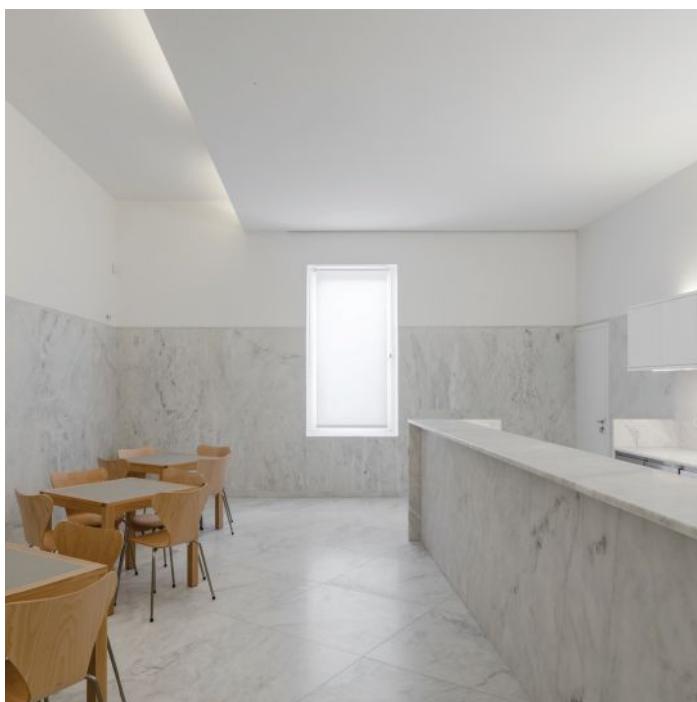
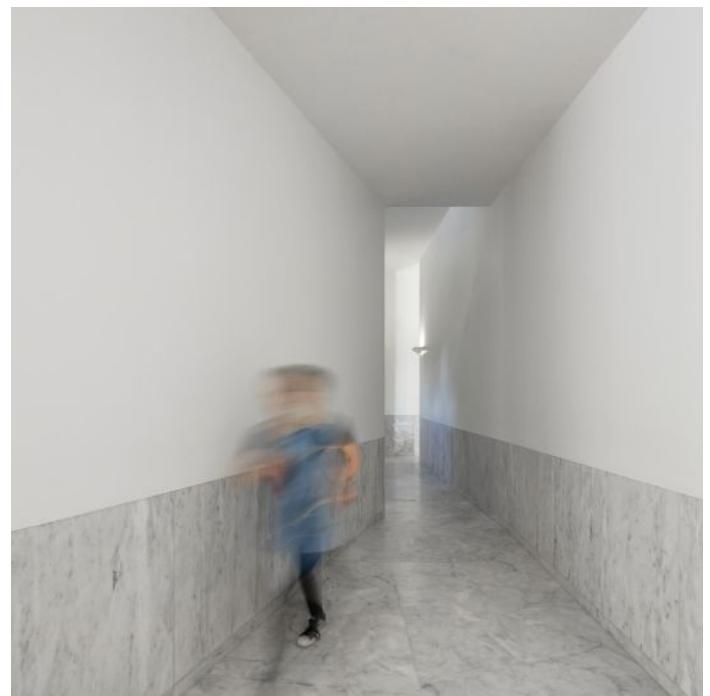


- 1. Shared lobby
- 2. ICSM documentation center/exhibition
- 3. Cafeteria
- 4. Administration
- 5. ICSM gallery
- 6. Classrooms
- 7. MMAP galleries
- 8. Theater





Above: Shared lobby on upper level



Top, Left: Documentation center at rear of lobby

Bottom, Left: Cafeteria

Top, Right: Upper-level hallway between the museums

Bottom, Right: Lower-level classroom





Above: Marble balustrade detail

Opposite: Stairwell



Above and Opposite: Lower-level transition between the museums







Restored hallway of archaeology museum



Above: Archaeological gallery with custom vitrine

Opposite: Exterior view from northeast of the joint between old and new

Project Credits

Project: Municipal Museum Abade Pedrosa and International Contemporary Sculpture Museum, Santo Tirso, Portugal

Client: Santo Tirso Municipality

Design Architect: Álvaro Siza Vieira, HON. FAIA, and Eduardo Souto de Moura, HON. FAIA, Porto, Portugal · Álvaro Siza Vieira, Eduardo Souto de Moura (lead architects); José Carlos Nunes de Oliveira, Pedro Guedes Oliveira (coordinators); Blanca Macarron, Diogo Guimarães, Ana Patrícia Sobral, Eva Sanllehí, Rita Amaral (collaborators)

Structural Engineers: Jorge Nunes da Silva, Filipa Abreu

Electricity and Safety: Alexandre Martins

Thermal/Mechanical Installation: Raul Bessa

Water and Sanitation: Raquel Fernandes (GOP)

Construction Inspection: Aniceto Carmo (Effiwat)er; Gustavo Esteves, Ana Margarida Cabral, Saúl Lopes (Aveiplano); Maria Fernanda Coelho, Adelaide Leite, Amélia Valença, Daniel Correia (CMST)

Technical Direction: Rui Alves, Sérgio Diogo, Eduardo Leite (ICSM); Ângelo Soares, Maria Antónia Casinhas (MMAP)

Programmatic Direction: Conceição Melo (CMST)

Museology Direction: Álvaro Moreira (CMST)

Graphic Design: Studio Waba

Constructor: CARI Construtores (ICSM); Alberto Couto Alves, Construções Gabriel A.S. Couto (MMAP)

Size: 23,215 square feet (ICSM)

Cost: Withheld





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Residential:



The AIA and HUD Laud Four Approaches to Affordable, Accessible, and Disaster Recovery Housing

TEXT BY SARA JOHNSON

This year's four winners in the AIA/HUD Secretary Awards, an annual program run by the AIA's Housing Knowledge Community with the Office of the Secretary of the U.S. Department of Housing and Urban Development (HUD), include senior housing in Oakland, Calif., a multifamily and cultural center in Chicago, a post-hurricane rebuilding effort in Houston, and an accessible residence in Port Townsend, Wash. Honored for Excellence in Affordable Housing Design, Lakeside Senior Apartments (above), designed by San Francisco-based David Baker Architects, contains 92 affordable units for seniors. "This project brings dignity and beauty to people in their twilight years, most of whom have had very difficult and stressful lives," the jury said.



Cement Tiles Juxtapose Dynamic Patterns with Muted Colors for Elegant Spaces

TEXT BY SELIN ASHABOGLU

1. Kimono Collection, Marrakech Design By Swedish architecture firm Claesson Koivisto Rune, these handmade tiles come in diagonal linear patterns called Kimono A and Kimono B that can be combined to create larger-scale geometric designs. contemporarytiles.se

2. The Native Collection, Exquisite Surfaces By Los Angeles-based studio Commune Design, this line of ceramic tiles puts geometries drawn from indigenous influences on repeat. xsurfaces.com

3. 3D Cement Tiles, Lindsey Lang Inspired by 1930s-era textiles for the London Underground, these embossed 7.8"-square tiles come together to form eye-catching installations. lindseylang.co.uk

4. Puzzle, Mutina This aptly named line of 10"-square graphic tiles by London-based industrial design firm Barber & Osgerby can be mixed and matched for diverse designs. mutina.it

> To discover more cement and encaustic tiles, visit bit.ly/ResidentialCementTiles.



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Kean University's David Mohney Discusses the School's Recent Bargain Buy: Michael Graves' Warehouse



INTERVIEW BY CHELSEA BLAHUT

In June, news broke that Kean University, home of the Michael Graves College for architecture and design, planned to buy the late AIA Gold Medal-winning architect's former residence in Princeton, N.J.—along with two nearby 20th-century houses—for \$20. The Warehouse, as Graves called the building in reference to its original use, was his residence and studio, a gathering spot, and a museum, and is now set to become an educational space for the Union County, N.J.-based institution. ARCHITECT spoke to the college's dean, David Mohney, FAIA, about the pending acquisition.

Why did Kean purchase the house?

It is a marvelous opportunity on several different levels. First, it's a chance to help preserve the legacy of a very important architect. Second, it's an amazing opportunity to use a first-rate facility for student-learning processes and to show them firsthand what it's like for a leading architect to live and work.

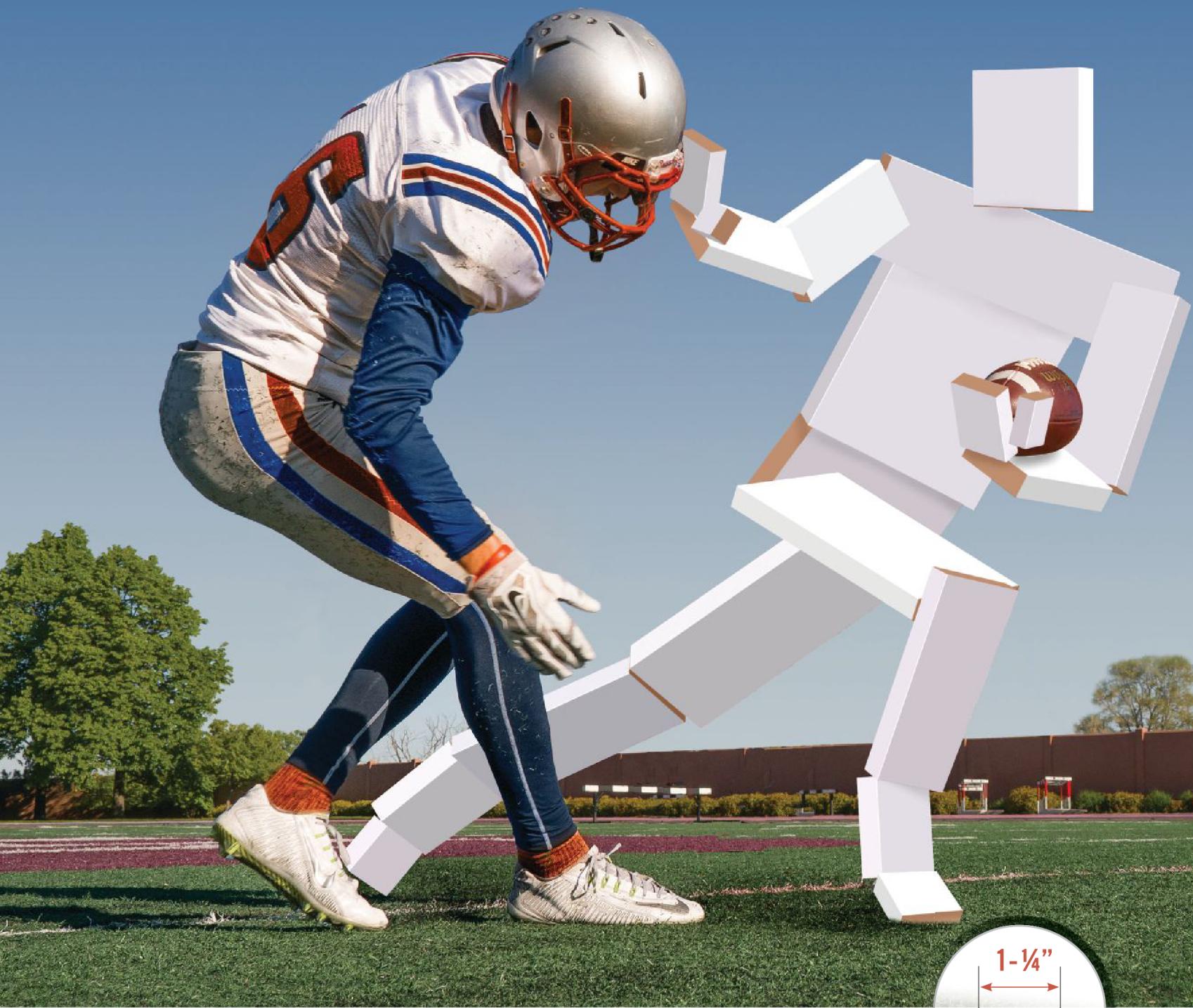
How do you plan to adapt the space to meet educational needs?

The intention is to preserve it the way that Michael wanted, which is to show what life was like for him. I'm assuming we will offer some small seminars, lectures, and salons, so we may rearrange the chairs from time to time, but we're not going to make wholesale changes to the architecture on the interior or even the furnishings very much.

What is the relationship between the house and its interior furniture?

The house is a part of Michael's estate, and that is the gift in return for \$20. The furnishings belong to the Michael Graves Foundation, so that's a different entity that owns those. It certainly was Michael's intention that the house and the furnishings stay together. So there are conversations going on between Kean and the foundation about retaining those furnishings.

> Read more of the interview with David Mohney at bit.ly/KeanWarehouse.



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**Linear Cabin
St. Germain, Wis.
Johnsen Schmaling Architects**

TEXT BY CLAY RISEN
PHOTOS BY JOHN J. MACAULAY



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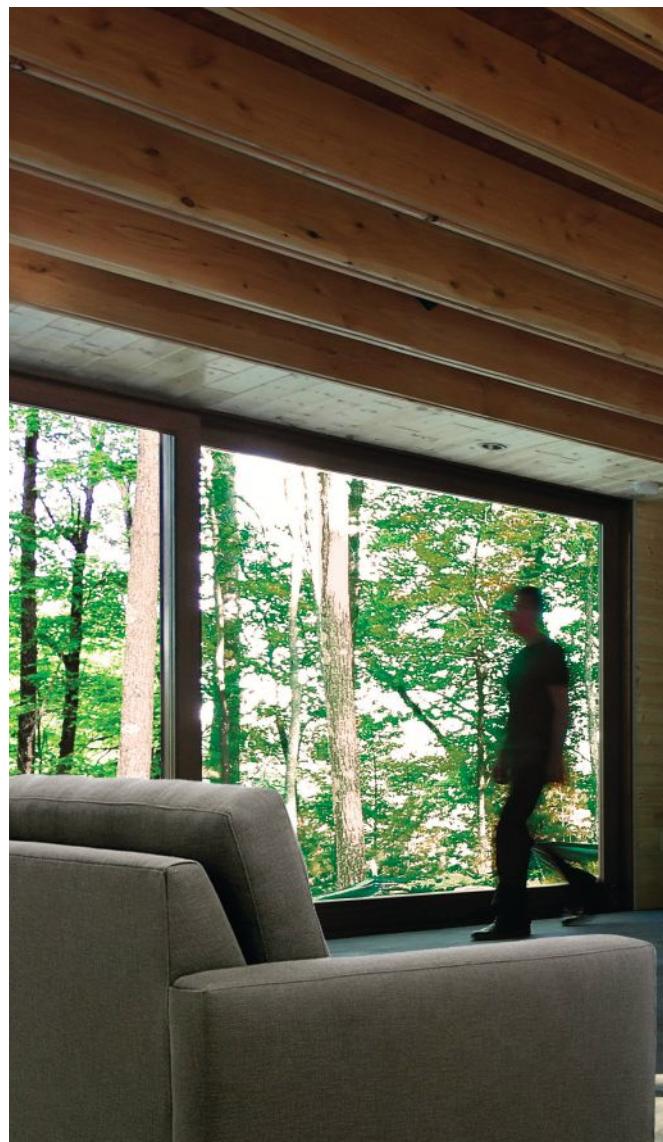
Call to mind a picture of the typical woodland cottage, and it's unlikely you'd imagine Johnsen Schmaling Architects' project in the northern Wisconsin woods: the 900-square-foot Linear Cabin, which won a 2016 AIA Small Projects Award, is a sparse yet striking arrangement of three rectilinear boxes separated by two voids and organized under a continuous, flat roof.

Starting with the utilitarian purpose of rural cabins—a step up from a tent, a place for sleeping and eating between hikes and fishing trips—the Milwaukee-based firm focused on a three-part program, with little room for amenities. The firm consciously avoided the sort of rural-modern affectations that define many of its neighbors. "We didn't want it to be a formulaic, slap-some-wood-slats-on-it sort of project," says principal Brian Johnsen, AIA, who co-founded the firm with Sebastian Schmaling, AIA. "We wanted to make something simple and efficient."

The first volume provides storage for canoes, fishing gear, and other outdoor equipment; the second contains a kitchen, bathroom, laundry, and boiler; and the third has two bunk rooms for sleeping. The project is wrapped in regionally sourced black pine cladding outside and varnished cedar and knotty pine inside, creating a severe exterior and rustic, inviting interior. The floor is polished concrete throughout.

The spaces between the three identically sized volumes play multifunctional roles: one a carport, entryway, and covered terrace; the other a living area called the hearth room. Floor-to-ceiling, lift-slide glass doors expose the hearth room to the elements during warmer months, while a wood-burning stove helps offset harsh winter temperatures. This indoor-outdoor space accommodates most of the socializing and entertaining, and provides compelling views toward nearby Alma Lake on one side and down the gravel road that connects the house to the outside world on the other. "By pulling the volumes apart, we've provided voids that create a connection to the landscape," says Johnsen, whose firm, founded in 2003, has developed a reputation for small, high-design residential projects marked by an attention to detail and carefully selected materials.

The building fits surprisingly well in its wooded context, a tribute to its understated character and sympathetic material palette. "There's a battle we have on every project," Johnsen says. "We see this beautiful lot, and we're asked to place something foreign on it. We're always torn, but it's our job." The result is a paradox, a strong statement that slips easily into natural surroundings. "It reminds me of stacks of firewood that people leave in the woods to dry," Johnsen says. "It feels like you're almost camping."

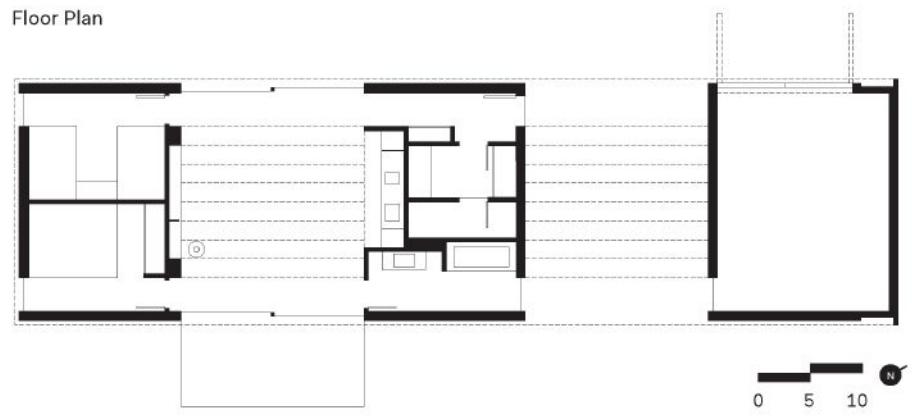


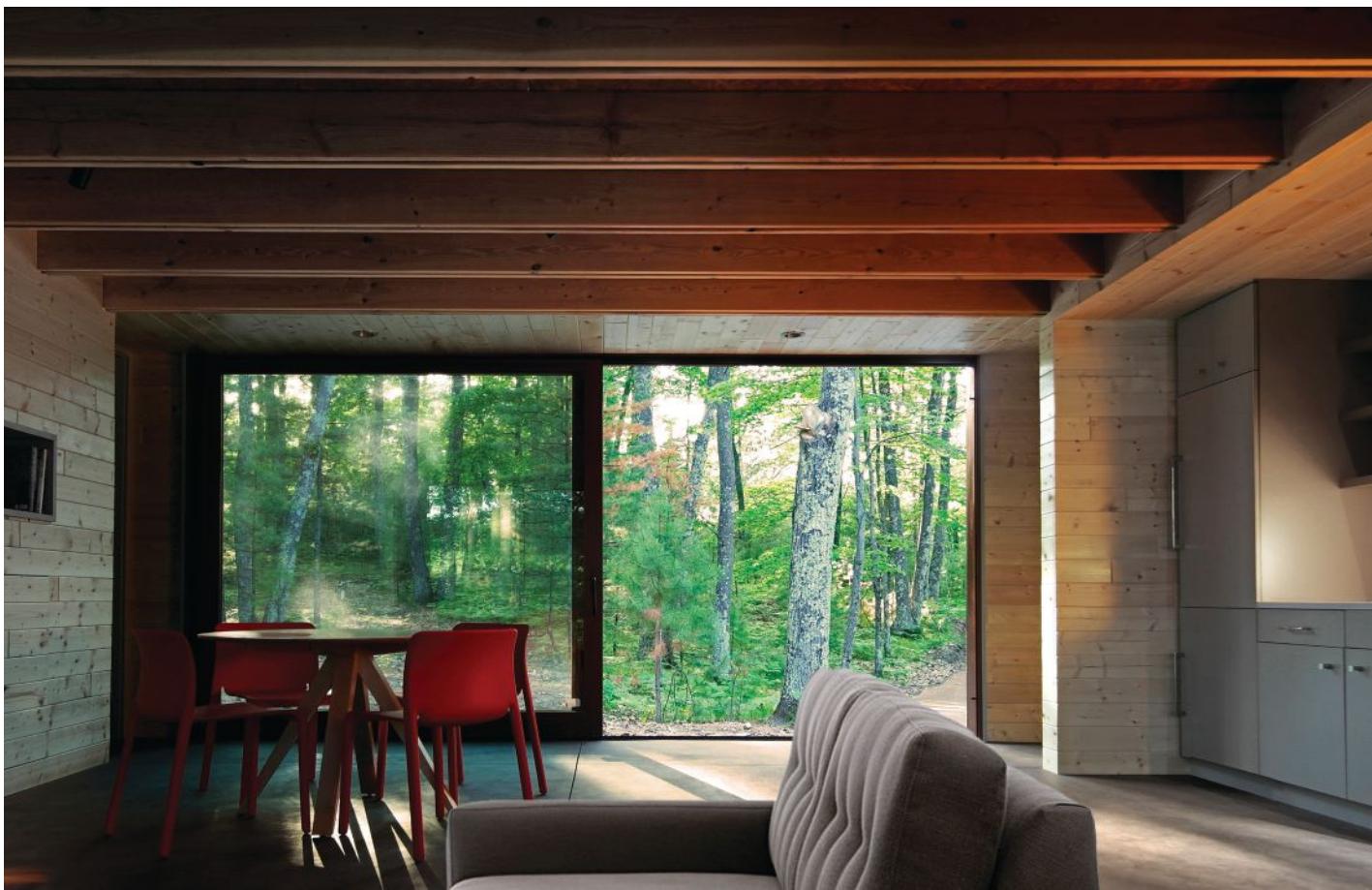
Opening Page: View of main living area from west

Above: Main living area, with view to bunk room beyond



Floor Plan





Above: Hearth room, with view of kitchen at right

Opposite: Bunk room





Project Credits

Project: Linear Cabin, St. Germain, Wis.
Client: Matt and Julie Sager
Architect/Interior Designer: Johnsen Schmalin Architects, Milwaukee • Brian Johnsen, AIA, Sebastian Schmalin, AIA (principals-in-charge); Matt Wendorf (project manager)
Structural Engineer: Core 4 Engineering
General Contractor: J&J Lee Construction
Size: 900 square feet
Cost: Withheld

View of storage and covered breezeway from north



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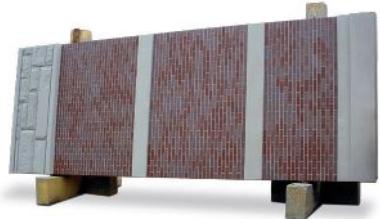
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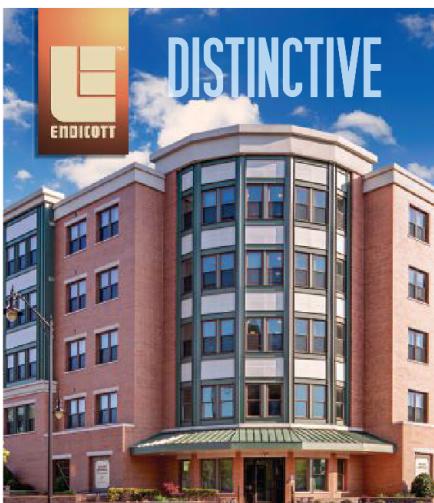
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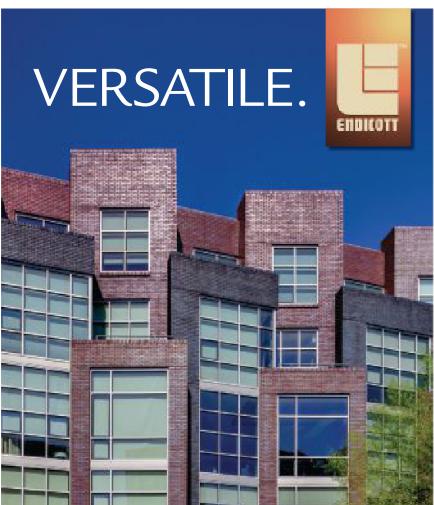
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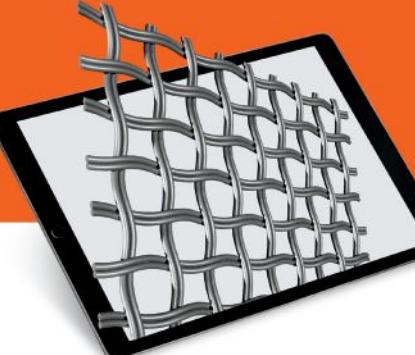
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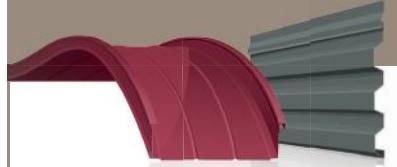


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Editorial:

The Stones of Syria

Since civil war erupted in Syria in 2011, some 500,000 people have died, 6.6 million have been internally displaced, and 4.8 million have fled the country. Ancient monuments, vital infrastructure, and entire cities have been destroyed. Living amid all of this, Marwa al-Sabouni's response was to write *The Battle for Home: The Vision of a Young Architect in Syria*, which was published in May by Thames & Hudson. Part history, part memoir, and part treatise, the book makes tragically clear how misguided policies toward the built environment abet the collapse of social order.

Al-Sabouni was born and still lives in Homs, Syria's third largest city. She earned her Ph.D. in architecture at the local university in 2014 and now teaches at a university in a nearby town. With the moral fervor of a John Ruskin—albeit a 21st-century, Middle Eastern, Muslim, and female incarnation—al-Sabouni bemoans the loss of values that once gave coherence to Homs' historically diverse population, among them an altruistic sense of faith, pride in craft labor, and love of place. In her telling, Syria's built environment has been devolving for the better part of a century, and has dragged the populace down with it.

The French, who ran the country between the world wars, tried to impose Cartesian order on a seemingly chaotic indigenous urbanism, demolishing tightly knit old neighborhoods to establish regular street grids. The Ba'ath Party, which has held power since 1963, has proven equally insensitive, appropriating private land to build residential blocks of abysmal quality and limited quantity. As of 2010, nearly 50 percent of the country's population lived in "informal communities"—the government-preferred euphemism for shanty towns.

"At first sight, the savaging of the built environment may not convey a clear connection to civil conflict, but the truth is that each of those acts left open wounds in the hearts of the people," al-Sabouni writes. "The official vandalism spoke to them of the

government corruption that squandered their money, stole their memories, ruined their settlements, and rubbed out the marks of their shared culture." What the Syrian government began, the civil war and the Islamic State are now finishing.

Will it be possible to rebuild? And if so, how? Al-Sabouni exhibits little confidence in the current standard of architecture in the region, dismissing contemporary riffs on old Islamic design motifs and construction methods as superficial manifestations of identity politics. The Dubai skyline she describes as "a shelf of perfume bottles."

Al-Sabouni is not entirely certain what form the reborn cities of Syria should take, but she knows precisely what the process of reconstruction must achieve: "Our need is for a shared home, and this home must be ours, built from our sense of who we are as citizens of this place, and from our wish to restore it, to embellish it, to make it our own, and to hand it on as a gift," she writes. "If we do not take responsibility for this place, or try to understand how meaning, beauty and a sense of the sacred can be inscribed once again on our land, then we will not build a home for our descendants. And they will be doomed to destroy what they find, and to destroy themselves along with it, all over again."



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